THE

FARMER'S MAGAZINE:

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(No. VIII.)

PART I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Observations on the Different Kinds of Grubs and Caterpillars.

GENTLEMEN,

IN the 4th Number of your Magazine, I observe an engraving, together with a very accurate account, of a Grub, supposed to have occasioned the failure of the oat crop last year. Having paid some attention to the same subject for several years past, I present you with my observations; which, as they are the result of experience, may not be unacceptable to some of your readers.

The Grub represented in No. 4th, is met with in wet situations every year, in greater or smaller numbers, in proportion to the heat or cold of the preceding season. While the insect remains in the egg state, no inclemency of weather can hurt it; a fact, of which last year affords a convincing proof; for, notwithstanding the severity of Winter 1799, and the coldness and inclemency of the following Spring, immense numbers were produced, which, by their ravages upon the oat crop, contributed not a little to increase the public distress. While in the grub state, it is likewise invulnerable; and the fly produced, is equally hardy. The only stage of its existence, in which it appears susceptible of injury, is, in passing from the grub to the aurelia state, when rains

and cold weather are fatal to it; and as, in ordinary years, that change takes place about the end of May, or beginning of June, a period at which rain commonly falls in considerable quantity, nearly the whole race perish every year, except such as have taken up their residence in the soft dry molehills that are met with in meadows, or in the sides of ditches; for, upon all the arable lands, I believe very few remain to propagate the species, unless in seasons when the weather is uncommonly dry during the whole of the period they remain in the aurelia state, as was the case in 1798. A part of May, and the whole of June, passed over with very little rain; in that way, a great proportion of the eggs, deposited in the arable lands, survived, and became grubs.

In tracing the history of an insect so very destructive, and which, were every season alike favourable to its production, would soon render the world a desart, we are struck with the circumstance of its being so readily destroyed by moisture, at a time when the rains, to it so fatal, are so highly necessary and useful to the crops.

This grub, however, is not the only one by which the crops are injured. There are several others, pretty numerous, and equally destructive, produced in dry soils, and in all seasons: these, like that already noticed, resist every injury of the weather throughout the year, and in every stage of their existence, except when they are in the aurelia state, when cold and moist weather kills them. The whole of the grubs bred upon dry lands, are of the moth tribe. In the drawing by which this is accompanied, No. 1. represents one of the most destructive of these, in three different stages of its existence:

A, the Grub,
B, the Aurelia, and
C, the Moth.

The grub comes into existence, if the Autumn has been very warm, about the end of October, and continues to increase in size, as long as any tolerable degree of vegetation is going on; after which, owing evidently to the want of food, it remains stationary till the following Spring; at an early period of which, its depredations are observed. About the end of February, it begins to grow, and continues increasing in size till the beginning of May, when it is upwards of an inch in length, and about one third of an inch in circumference. It is then exceedingly destructive, and cuts through

through the roots of the strongest stalks of grain in a very short time. I this year took one of them, and put it into the earth, which consisted of soft black loam, at the root of a plant of oats that had sent out thirty-seven offsets, and had been well earthed up. The grub was put in about mid-day, and well covered up. The plant was examined next day, about the same hour; when the leaves were found hanging down, seemingly in a dying state. Upon looking at the root, I found not only the main stem, but the whole of the offsets, so much injured, that there appeared little hopes of their recovery. Accordingly, in a few days thereafter, they were all dead.

In seasons when they are numerous, the mischief they occasion is certainly very great: fortunately, however, nearly the whole race perish every year: and the stock is kept up from the eggs, deposited in the sides of ditches, in plantations, and amongst coarse-fogged herbage, which preserve the aurelia from being injured by moisture.

In describing an insect so very destructive, it would afford me great satisfaction to be able to point out a remedy for the evil: of that, however, I confess myself in a great measure ignorant. Lime, in the act of slacking, is certainly fatal, not only to the grub, but to insects of every description, which come within the reach of its influence. But, though it is thus baneful in a hot active state, (a circumstance that well deserves the attention of all farmers), I do not find it equally so after it has re-absorbed a proportion of carbonic acid, sufficient to reduce it to a powder. It is certain that grubs are less numerous in fields that have been recently limed, than in lands of the same quality, to which no lime has been applied. Still, however, they live in such soils, and propagate their kind; and I am inclined to think, that after the lime has completely saturated itself with fixed air, and got into a mild state, the vermin will thrive equally well in such fields, as if no lime had been applied. One mode of prevention certainly is in the power of every farmer, namely, that of keeping the tops of ditches, and hedge sides, clean and free from that rough noxious herbage with which they are for the most part covered, and which, along with their serving as a nursery for grubs, and many other kinds of vermin, are a fruitful source of mischief, from the numerous weeds yearly produced upon them, the seeds of which are wafted into the adjoining fields by the winds, and, in spite of fallowing, and every other attention that can be paid, fur-

nish a fresh stock annually, by which the soil is constantly kept in a dirty state, and much labour and expence incurred, that might, with a small degree of attention, be avoided.

The varieties of the large moth, are very considerable; but their history does not differ materially from that now given, at least as far as I have been able to trace it. The different kinds of caterpillar, with the exception of the early black one, belong also to the moth tribe.

No. 2. represents the black caterpillar, so destructive to the gooseberry and currant trees, in the early part of the season.

D, the Caterpillar,
E, the Aurelia, and
F, the Butterfly.

The caterpillar comes into existence early in September, and, in very dry, warm seasons, even sooner, and continues alive throughout the Winter, be the weather what it will. In late years, however, it is towards the end of November, or the beginning of December, before they are produced. When that is the case, they are very small and weakly in the Spring; and, if the season is favourable to vegetation, the gooseberry and currant trees push out a profusion of leaves, which places them beyond the reach of danger, before the vermin arrive at any considerable size; and as it is only upon the tenderest and most succulent leaves that they feed, an early Spring, by placing the foliage in an advanced state, soon renders it hard and unpalatable to them. In that way, many of them perish for want of food; and it is only the worms produced by the earliest eggs, that survive and get into the aurelia state. But, in years when the Summer and Autumn are warm and dry, and the eggs produce worms in September, or early in October, the vermin acquire a considerable strength and size before Winter; and, in the Spring, are so formidable, as to be able, by eating the heart out of the bud, before it is expanded, to strip the trees entirely, both of leaves and fruit; a thing that very frequently happens after dry seasons, especially in the immediate vicinity of large towns. When the trees are thus early deprived of their leaves, they appear as if they had been scorched by fire.

The black caterpillar, like the grub, is most vulnerable when it is in the aurelia state; and is then very readily destroyed by cold or moisture. But instinct seems to have taught the worms the secret of preserving the future aurelia; for when they have arrived at that stage, immediately preceding the change they are about to undergo, they, in general, make choice

choice of a situation where there is little risk of their being injured. Accordingly, the aurelia is, for the most part, found either in crevices of the wall, or attached to the under part of the leaves, which afford them complete shelter: in that way, very few of them perish.

For the destruction of this species of vermin, many remedies have been recommended; most of them, however, without effect: and I am inclined to think, that, in cases where they have bred in great numbers, and made considerable progress in the Spring, their destruction will be a difficult, if not an impossible task, even with the most powerful remedies. But, though we are yet, in a great measure, without a remedy in that stage of the evil, the mischief may be prevented, at an earlier period, by very simple means.

Every attentive man must have observed, that these vermin appear first at the bottom of the bush, and travel upwards, stripping the branches entirely in their progress. A very satisfactory reason can be given for the caterpillar beginning its depredations at the bottom of the tree. The same instinct that directs the worm to seek a safe sheltered situation for the aurelia, influences the butterfly, in depositing her eggs, which she uniformly does, either upon the under part of the branches or leaves: in both of these situations, they are sheltered; and when the leaves fall in Autumn, they are equally safe; as it is well known, that the leaves of trees, when collected in sufficient quantity, afford the best protection against frost and moisture; a circumstance, of which any person will be readily convinced, by turning over a quantity of them, either during frost, or after heavy rains, when the ground, even in the most intense frost, will be found dry and soft under them. Thus cherished and protected, the vermin remain at the bottom of the bush till the Spring, when they begin to ascend in search of food; but, as they do not leave the root before vegetation has made considerable progress, the task of destroying them is then easy, and may be completely effected, in the following manner.

Take two or three handfuls of burnt limestone that has been reduced to powder by beating, without being previously slacked, either by the action of the air or by moisture; spread the lime thus powdered round the root of the bush, cover it with earth, and give it water sufficient to slack it. During that operation, the whole of the vermin are destroyed, without the smallest injury to the bush. I have tried many remedies; but never found any of equal efficacy. Tobacco

liquor, and other nauseous ingredients, are in some instances *useful*, but not certainly *effectual*, especially in wet weather; as they are in general washed away by the first rain, and their effect lost.

No. 3. represents the green caterpillar, so destructive to the larger kinds of fruit trees in the Spring.

G, the Caterpillar,
H, the Aurelia,
I, the Grub.

It is a moth of an ash colour, the points of the wings tipt with white. The eggs of this insect are, for the most part, laid either in the crevices of the wall, the cracked parts of the bark, or in the outer husk of the buds that are to produce the fruit blossoms the following season. Like the black caterpillar, they are extremely hardy, and tenacious of life; and do not appear to be at all affected by the weather, either in the egg or worm state. They do not, however, come into life so early; it being generally the middle of March, and, in backward seasons, still later, before they are produced. When about to pass into the aurelia state, they are still more susceptible of injury than any of the preceding. They are also more readily destroyed by the application of nauseous ingredients: a solution of aloes alone will answer the purpose, if made pretty strong, and applied to the branches with a brush, before the blossoms begin to expand. The value of this preparation does not consist so much in killing the vermin, as by rendering the leaves and blossoms nauseous and unpalatable, and in that way preventing their feeding upon them. Tobacco liquor added to the aloes, if carefully applied during dry weather, is certainly fatal. But, as this moth is most destructive to trees placed upon walls, particularly such as are naked, and full of holes, which afford shelter, not only to this moth, but to vermin of almost every other description; a pretty effectual remedy will be met with, in first brushing off all the loose lime, and afterwards harling or dashing the walls with quick lime, in such a way as to fill up every interstice. If this is carefully done about the end of Autumn, and the precaution used, of brushing the branches with a solution of aloes and tobacco liquor, in the Spring, as formerly mentioned, the greatest part, if not the whole race, will be destroyed.

There are two other kinds of gooseberry caterpillar, more common in country situations, than in the vicinity of towns; which are exceedingly destructive, and have hitherto baffled every attempt to destroy them. They are of the same size

as

as the apple vermin just now described; and are produced, the one by a small moth, with orange-coloured wings, fringed with black spots; the other, by a moth with an orange body, the wings light grey, slightly spotted with yellow and black. That with the orange wings generally appears early in June; and, if the weather continues warm and dry, does considerable mischief, unless great pains are taken to destroy them. I have tried many remedies, without effect. Spreading a sheet over the bushes, and fumigating with sulphur, is certainly destructive, if properly done; but, along with its destroying the vermin, it sometimes entirely kills the bushes, and, in every instance, is attended with the entire loss of both leaves and fruit for the season: It is therefore a dangerous remedy, and ought never to be resorted to. Many years ago, I succeeded in clearing my bushes, in a way that, along with its being easily put in practice, in every situation, is attended with no injury to the bush.—It consists simply in spreading a couple of sheets upon the ground, one on each side of the bush, close to the root, so as to cover a space fully larger than the branches reach; when that is done, give the stem four or five smart strokes with a stick, near the root, which will stun the vermin, make them lose their hold, and hang quite loose; in that situation, they are easily shaken off by the hand, and admit of being clean gathered up, and destroyed, either by burning, or otherwise. In every instance where this has been properly done, it has been effectual, and not only preserved the crop then upon the bushes, but been the means of keeping them clean the following season.

The other moth, with the yellow body and grey wings, are seldom seen sooner than the beginning of July, unless the season is very warm. About a couple of weeks thereafter, the caterpillar becomes visible upon the bushes; and, if not timeously prevented, very soon strip them entirely of their leaves: Like the former, they resist every attempt to kill them by poison; and can only be got the better of by hand-picking, and shaking the bushes, in the manner above described.

In this place, I think it necessary to destroy the delusive idea, held out to the public, of an effectual remedy for this kind of vermin, for which a premium was given by the Highland Society. I have repeatedly tried it with every possible degree of care; in no instance has it been completely effectual; and in a great proportion of the trials, it has entirely failed.

Such a caution is the more necessary, as many gardeners, who have a considerable dependence upon their gooseberry crops, by trusting to it, may neglect the more effectual method of cleaning their bushes, by shaking, and collecting the vermin. In conclusion, I have to add, that no better preventative can be used against the whole tribe of vermin, by which gooseberries and currants are annoyed, than that of sprinkling a little shell lime, that has been beat into a powder, at the root of every bush, about the end of Autumn, and managing it in the manner already pointed out.

I am, &c.

A. Z.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Communication from Sir JOHN SINCLAIR, Bart. M. P. on the Subject of Folding Sheep.

GENTLEMEN,

THERE is no particular, connected with the management of sheep, that has been more keenly controverted, than the propriety of folding. I was anxious, therefore, on that important subject, to obtain the opinion of one of the most intelligent farmers in England, namely, Mr John Ellman of Glynd, near Lewis, in Sussex, the founder, I may say, of the celebrated South Down breed; and I subjoin the substance of his sentiments upon it. The result seems to be, that though folding is not calculated for rich land, or small inclosures; yet, in hilly districts, where it is adviseable to raise Winter food in the low parts of the farm, for the great numbers of sheep which the upper parts can maintain in Summer, such a practice may be of great use. Indeed, from Mr Ellman's calculations, it would appear, that, at the rate of 4s. 6½d. *per* sheep, the English farmers make more by folding, than many tenants in the Highlands of Scotland do, from both their sheep and wool, under the present system of management.

With my best wishes for the success of your interesting publication, I remain, Gentlemen,

Your humble and obedient servant,

Charlotte Square, Edinburgh,
3d July 1801.

JOHN SINCLAIR.

Extract

Extract of a Letter from Mr Ellman to Sir John Sinclair, on the Subject of Folding Sheep.

" According to your desire, I now send you my thoughts on the advantages, and disadvantages, of folding sheep; and, first, beg to observe, that I am not so far an advocate for folding, as to think it right in all situations; particularly in small inclosures, where driving the sheep to and from fold, might materially injure them, and destroy a great deal of grass, by trampling on it. I am ready to acknowledge, that a greater number of sheep might be kept on a given space of land, divided into small inclosures, by laying them in small parcels, than if kept together in one flock and fold. Acknowledging this, does not prove, that folding, in other situations, has not its advantages, particularly in an open country. In such a situation, there is not the same injury done, by treading down the grass, as in small fields: but, on the contrary, the farmer is enabled to manure such part of his farm, as he may think proper, particularly that which lies at a distance from the farm-yard, and which seldom, if ever, has the dung cart going on it. Mr Young observes in his Annals, (Vol. XXI. p. 615.) " I believe, the reason why farmers are such warm advocates for folding, arises from the power it gives them, of sacrificing the grass land to the arable." This I do not agree to, as, on many farms, the sheep are supported more from the arable, than the grass land, and often folded on the latter. Taking the sheep off their feed to lodge in the night, we think of great use, as it prevents dropping their soil on the pasture (what our shepherds here term *stenching* their food), which we look upon as of great use at the time when we are feeding our sheep on tares, clover, turnips, or any artificial food. I always caution the shepherd, as soon as the sheep have done feeding, to drive them off immediately, and not let them lye down, or stop to soil their food. Some shepherds are not so careful; in such cases, I observe the sheep never eat clear. I believe few animals (indeed, I know of none, except swine) which like to feed where they drop their soil; and it is fair to suppose, that the All-Wise Disposer of events has so ordered, that the brute creation should be endowed with that degree of instinct, which enables them to refuse such food as is not whole-

wholesome. This, we have an opportunity of ascertaining, when we fold on the grass lands. The sheep always refuse the first shoot of grass after folding, and will not take it while they can get any other; and, if obliged to feed on it, is certain to cause the flux. Another advantage arising from folding, is, keeping the sheep confined in the fold, particularly in the Autumn, till the hoar frost and heavy dews are gone off the grass, which prevents the disorder here called the red water, and which in some places is called the blood or white water *; in fact, the dropsy. This disorder, I believe, most sheep are liable to, and is caused by taking into the stomach too great a quantity of fluid. Many other reasons might be advanced in support of folding; but I hope, what has been stated, is sufficient to prove, that the practice has some merit. And now I beg leave to state the *quantum* and value of folding.

Just twenty South Down sheep (if a larger sheep, a less number will do) will fold one rood or rick *per* night; 3200 will fold one English acre *per* night. We value the manure at from 35s. to 50s. *per* acre; the goodness of which depends much on how the sheep are kept: if kept on artificial food, such as tares, rape, clover, turnips, &c. they will drop more soil, than if fed on grass only. Supposing we estimate the folding at 40s. *per* acre, it will amount *per* year to 4s. 6¼d. *per* sheep, 22l. 16s. 3d. *per* hundred, or *per* thousand 223l. 2s. 6d. This calculation is made, supposing the sheep are folded through the year. If it is a breeding flock, it might be well to omit folding, for five or six weeks, immediately after lambing, as the young lambs might suffer from being trampled upon, and, from driving to and from fold, would often lose their dams, and suffer in that way more than if they remained quiet.

I have often disputed the practice of folding with the late Mr Bakewell, who always, to make use of his phrase, said, "It was robbing of Peter to pay Paul;" and there we stopped. But if I had not to boast of bringing that truly celebrated breeder over to my opinion, I can say, that no argument I ever heard him, or any other person advance, in the least altered mine."

FOR

* Supposed the same with what in Scotland is called the *brany*.

FOR THE FARMER'S MAGAZINE.

LETTER VII.

Strictures on Farm-Management near London.

(Continued from p. 278.)

August 1799.

Your soil seems to me excellently adapted for the cultivation of beans; but your bean husbandry is slovenly in the extreme. Beans, properly cultivated in drills, and thoroughly horse-hoed, hand-hoed, and weeded, in the intervals, form a cleaning crop of the first quality. This crop, judiciously and industriously managed, is an excellent auxiliary to the perfect fallow which has gone before, and a fine preparative for the next fallow which is to succeed it, in the following course of rotation; besides being a most perfect preparation for a crop of barley or wheat immediately after. But, when sown broadcast, more especially on land that has been dirtily fallowed, or, to speak the truth, not fallowed at all, their effects are the direct contrary of all that I have stated. They grow open at the roots, and give room for weeds of every kind to thrive among them; thereby becoming themselves a foul and scanty crop, and ruining the condition of the land for every thing that is to succeed them.

When sown in drills or rows, twenty-four to twenty-seven or thirty inches apart, beans admit of being ploughed between, like turnips or potatoes, and being hand-hoed and weeded in the rows. By these means, joined to the clean fallow already recommended, and weeding the corn crops, which should never be omitted, the land can, and ought to, be clean like a garden: and, by such means, the whole energy of the soil is exerted in the production of crops of corn, and other valuable plants with which the judicious husbandman wishes it to be occupied; instead of expending a very great portion of its vigour in the growth of unprofitable weeds.

A drill machine for sowing beans, of a very simple construction, is used in this country, which answers the purpose admirably, and only costs from fifteen shillings to a guinea, or thereabout. It is a square box with a cover, mounted on two light wheels that extend the breadth of two drills, having a funnel, or hopper, that hangs in the intermediate drill to be sown, and a cylindrical hair-brush to let out

out the beans regularly. The land is made up in straight lined drills of a proper width, and regulated in its depth according to that of the soil, by means of the double mould-board plough. The drill-box runs along these drills, giving out its seed regularly; and the double mould-board plough afterwards splits the drills or ridgelets, and covers up the beans.

The plough you have, with two mould-boards, answers extremely well for forming the drills, covering in the seed, and earthing up the rows finally, after the land has been properly cleaned. It would be a great deal more convenient for the purpose, if the mould-boards were made to shift, wider or narrower, as occasion might require; and if the left hand mould-board took off occasionally, so as to gather the soil into a ridgelet between the drills, by going twice about before hand-hoeing. After this, with both mould-boards on, and regulated to a proper width, the gathered ridgelets are split open, and the earth laid back to the roots of the plants.

The regular system of bean husbandry is shortly as follows. The land intended for beans should be ploughed before Winter, and laid completely dry by water furrows and cross trenches, all carefully opened up by the spade. Very early in Spring, the gathered ridges or lands should be cloven down; immediately after that, cross ploughed and harrowed; then drilled up, and sown as fast as possible. If the land is very clean, and in fine tilth, the cross ploughing may be omitted.

After the beans are up, and the first crop of annual weeds, plough between the rows, gathering the soil between them, and going as near as possible to the beans, without injuring them. Then hand-hoe the small part of the drill left, and carefully hand-weed between the plants. When a second growth of weeds has risen, hand-hoe and weed again. And lastly, split open the gathered ridgelet, earthing up the beans. After this, they have got so much head, as pretty surely to prevent the farther growth of weeds.

Some very good husbandmen, in this country, sow their beans in a different manner, which requires a good deal less ploughing. Three common ploughs are employed, the drill box following the third; so that the beans are sown in every third furrow. The land is always very well harrowed, some time before the beans appear, to destroy any weeds that may then have sprung up. The after management of horse and hand-

hand-hoeing, is exactly the same in both cases: so that, although in this way the land is not raised at first into drills, it becomes afterwards formed in that way.

Another practice of many excellent farmers, must be here noticed. Instead of ploughing away the soil from the rows, they use a kind of skimming plough, or horse-hoe, having a flat share, somewhat like a mason's trowel, with two long wings projecting backwards. This is inserted a little below the surface, and cuts off all the weeds between the rows. The hand-hoes destroy those that are too near the beans, for this skimmer or horse-hoe. The skimmer and hand-hoeing are repeated two or three times, according to the prevalence of weeds: and, finally, the double mould-board plough earths up the rows. Where people for hand-hoeing are very scarce, farmers sometimes endeavour to bury the weeds, by twice earthing up the intervals, by means of the double mould-board plough. *R. r. r. r.*

LETTER VIII.

Strictures on Farm-Management near London.

August 1799.

The plough, which I saw used, for general purposes, in the whole country between London and your estate, and for a great way north, seems to me a very clumsy and cumbrous instrument. I do not pretend to enter into any mathematical analysis of the construction and action of ploughs; but, from what I saw of this plough in Hertfordshire, where I took very particular notice of several of them in action, it seems a very heavy draught for the horses, and extremely laborious, even for the man who holds the stilts. Neither, so far as I could judge, did it seem at all well calculated for reducing the land into good tilth, or for performing any one operation in husbandry to advantage. So far from turning over the ground, which, according to my ideas and information, is a very necessary operation in all good husbandry, it seemed only to move the plit from one part of the ground to the other; leaving it altogether to chance, for the top of the old ground to fall off into the last made furrow, with a part of the weeds along with it.

This heavy inefficient instrument, I should suppose to be the old implement of our half-barbarous ancestors, altogether

ther unimproved. It resembles very much the old Scotish plough, in the length and lowness of its beam, and in the form of its mould-board. In this country, the old plough has long and justly been laid aside, on account of the difficulty and consequent expence of its draught; and I have only occasionally seen it, in out-of-the-way mountainous districts, where improvements have not hitherto been able to dissipate the mist of ignorance and prejudice, and where, of course, the rents still continue low, and the husbandmen poor.

The plough which is now universally adopted in every improved district, in the South of Scotland, and North of England, came, I believe, originally from Yorkshire, under the name of the Rotherham plough; and I have reason to believe, it is of Dutch or Flemish origin, as I have heard that, in Yorkshire, it is called the Dutch plough. Whatever be its origin, this plough was very much improved, in its form and materials, by a country plough-wright in the county of Berwick; and, from his name, it is now generally called *Small's Plough*. It answers every purpose in general husbandry, infinitely better, and more commodiously, than the old Scotish plough, which, as I said already, resembles yours or the Hertfordshire plough, and is vastly easier both for the man and horses. In its employment, it is drawn by two horses abreast; and the same man who holds the stilts, directs the horses with long reins, and by his voice.

When the land to be ploughed happens to be very tenacious and difficult, as in stiff clay soils after long drought, it is then usually drawn by three horses, and driven by a boy. In this case, two of the horses are yoked abreast, to what is named an advantage swingle tree; and the third horse is yoked by traces in front of the land side, or near, horse.

I do not answer for the precise exactness of the following statement, as I report altogether from memory, at the distance of several years; but I am certain they are very near the truth. In the same field, and doing exactly similar work; ploughing out old grass ley, with a plit of regular and equal depth and width, our old plough, which resembles yours, and our new one, as improved by Small, were compared together, in presence of a large party of gentlemen and practical farmers. By interposing a graduated spring steelyard, fastened to the heads of the ploughs, between the resistance and the draught, the forces necessary for working

ing both were exactly ascertained. The old plough required a power equal to fifteen or sixteen hundred weight, to impel it heavily through the ground; whereas the new one required only a power corresponding to eight or nine hundred weight at the most.

It is scarcely necessary to offer any commentary upon the result of this experiment. To draw the old plough, requires uniformly four horses in strong ground, especially for the first ploughing; and, if the ground be very dry and much caked, four are unable for the work. Hardly ever does the improved plough require more than two; and, in no case, of land unincumbered with sitfast stones, more than three ordinary horses; and where it requires three, the old one will need six. In this part of the country, and in ordinary years, the hire of a man and pair of horses for a day's work, is about five shillings; which may therefore be reckoned the cost of ploughing a statute acre with Small's plough *. The addition of two horses and a lad, which are necessary for the old Scotish plough, and, I presume, likewise for yours, will very nearly double the expence of ploughing an acre in your way. Even supposing that the subsequent ploughings of a fallow, with you, should require only three horses and a driver, and with us, on similar land, that three horses and a driver are necessary for the first ploughing; you will see that, taking every thing together, the new plough will do its work for half a crown an acre, each ploughing, cheaper than the old one.

Only in one case, that I know of, is the old plough superior in efficacy to the new; and that is owing solely to its vastly greater strength, and heaviness of construction. This is for tearing out, from a state of nature, land that is incumbered with sitfast stones, or with the roots of trees and bushes. For such purposes, I have known a plough altogether constructed of iron, and drawn by six or eight horses. As

* For a considerable time back, an acre could not be ploughed for less than 7s. 6d.; and last year, owing to the high price of every kind of fodder, &c. it was nearly twice that sum.

Note by the Conductors.

The old Scotish plough has certainly been laid aside, on account of the resistance made to it by the soil, and the great strength required to draw it; but, so far are the principles, upon which it was constructed, from being wrong, that Small's plough is, with very little alteration, the old Scotish plough upon a reduced scale; and the same implement, upon its largest scale, is still used, in situations where a deep strong furrow is required, and does its work uncommonly well.

As a counterpart to this, I must inform you, that I have lately been informed of a poor man in my neighbourhood, who worked a small farm, of free soil, for many years, with one horse only.

A great deal has been said and written lately, in favour of working farms by oxen, instead of horses. I do not wish to enter upon a subject of controversy, in which men of very great talents have engaged on opposite sides. One very strong reason against oxen, *à posteriori*, is, that they are every where in this country given up by the farmers, who certainly ought to be the best judges of what is, or is not, profitable. But the matter may very readily be explained in another manner; which may be termed *à priori*. Formerly, owing partly to a bad breed of cattle, and partly to an improper manner of bringing them up, oxen could not be fed off for market, till seven or eight years old. It was then wise to work them for two or three years; as, while still only store cattle, they were old enough, and firm enough for working. Now, partly from having improved the breed, and partly from improvements in the methods of rearing, bringing up, and feeding them, oxen can be fed off, with profit, at four years old; when they are still too young, and too tender for work of any labour or difficulty.

I shall not enter upon the discussion of, whether the beef of these younger oxen be equal to the older, or inferior. I readily grant it to be inferior. But, so long as the public chooses to purchase young beef, and the farmers thus find it their interest to feed off their cattle young, horses must continue to be the beasts of draught, wherever profit is the ultimate object of the husbandman. Country gentlemen of fortune, who hold arable ground in their own hands, and who wish to have their tables supplied with beef of superior quality, may, on the other hand, very properly employ a few teams of oxen in their ploughs; and will thus turn two or three years of an ox's life to profit, which would otherwise be idly spent in the field or fold yard.

On the comparative advantages and disadvantages of horses and oxen for farming work, I must refer you to the Agricultural Report for Northumberland, in which that subject is most ably and satisfactorily discussed; though I think the calculations are underrated, and ought to have shewn a much greater preponderance in favour of horses. At all events, the Reporter distinctly proves, that ox teams, universally adopted, would unquestionably produce a famine.

Yours, &c. *R. r. r. r.*

TO

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Subsetting Farms.

GENTLEMEN,

THE question, under what circumstances a lease or tack of a farm in Scotland may be assigned or subset, is one of no trivial importance to the general interest of the community.

It is strange, that, while our courts of law are liberally undermining the other parts of the Gothic system of jurisprudence, they should now be strengthening the foundations of that part of it which tends directly to render farms extra-commercial property.

By the law of England, I believe, leases are not only assignable, but the proprietor of the farm must, on an assignment of the lease, declare his election, whether he inclines to hold the original lessee bound for his rent, or trusts to the assignee, as he cannot have both; and, on the whole, a lease, whether granted for a long or short term of years, seems to be held, there, under as ample powers as the proprietor might have possessed the ground himself, for the period of the lease.

From the present interpretation of the laws of Scotland, by the decisions of the Court of Session, a tack of lands does not imply a power, either to assign, or even to subset, although, in the latter case, both the principal lessee and subtenant were always understood to be bound for the rent to the landlord.

Tacks, in general, are, by the commentaries of our lawyers, considered as unassignable, from their being supposed to imply a *dilectus personæ*, or election of the person of the tenant by the landlord: Yet it is admitted, that a liferent tack is assignable, which surely implies more of a *dilectus personæ* than any other. All tacks, likewise, that are to subsist for a great length of time, are also assignable, as well as subsettable; but, rather unfortunately, the length of endurance necessary for conferring this privilege, hath not been fixed by law. By a late decision of the Court of Session, in the case, Simson against Gray, 22d May 1794, it was found, that a power of subsetting was implied in a lease of thirty-eight years. With submission, there seems to be no

solid ground for any distinction, in judging a tack assignable or unassignable, derived from the length of its duration merely.

By the feudal law, this *dilectus personæ* was carried so far, that even an heir was not permitted to enjoy the tack of his father, unless it was so expressed in the lease. What an obstacle, this, to the improvement of the soil! And does not the exclusion of assignees in tacks, remain an obstacle of the same nature? What an incentive, on the other hand, to industry, if a tenant, who had successfully improved one farm, had it in his power to assign his tack, and remove to a new and wider field for exercising his talents! Nor does there seem to be any sound reason, that a tenant, who now-a-days generally buys his tack, as the highest bidder, at a public or private sale, should not have it in his power to sell it again, to avoid loss, or obtain profit, to any person able to pay the rent, as freely as a proprietor of lands sells his property, when he finds it does not suit his views. This plan would be much more reasonable, than that the law should force a tenant to remain in a farm he cannot manage, till he is utterly ruined; as is but too often the case.

Moreover, if a tenant does become bankrupt, it is hardly to be expected, that an adjudger, who enters to his farm from necessity, and is accountable as a factor, will do any thing for the improvement of it: for it is held as law, that a tack which bears no power to assign, may yet be adjudged by a creditor of the tenant. Expediency may, therefore, in every view, be strongly urged in favour of a more unlimited power in assigning tacks.

The idea of a *dilectus personæ* seems to have arisen from circumstances of a temporary nature, now no longer of consequence; from the rudeness of the age, landlords then relying more on the fidelity of their tenants and retainers, than on the protection of the laws; from the municipal regulations of the country, which rendered proprietors of the land responsible for the conduct of those who resided on their estates; and also, from the nature of the prestations then exigible from tenants, which, consisting almost entirely of personal services, brought them nearer the state of menial servants, than that of modern farmers. Hence it was, that a lease, during these periods, was considered as a contract *stricti juris*. If given to a woman, it fell by her subsequent marriage. If to a man, it became void by his death.

death. It was, alike, incapable of voluntary, as of judicial transmission.

But, for more than a century past, this contract having been treated by the Legislature, and wisely enforced by our judges, in conformity to the sense of the country, has regained much of its original nature. It is no longer the personal services of the tenant, or his peculiar qualifications, but the rent, in money, which he can afford to pay, which a landlord has in view. Accordingly, the Court of Session have found, that the principle of law, regarding tacks *not bearing to assignees*, being unassignable without the consent of the heritor, does not apply to urban tenements; and on that principle, on a question, as to a tack for thirteen years, of a house in a burgh, it was decided, it might be assigned without the consent of the proprietor.—Kilkerran & Falconar, January 7. 1748, Aitcheson *against* Benny.

As to subtacks, as Mr Erskine observes, there was not the same reason against sustaining them, as against sustaining assignations; because, by a subset, the principal tacksman is not changed. On that principle, the power of granting them, seems to have been ever, till of late, recognized as implied in a lease, by our law, as it was by the Roman law.

This power, however, was questioned in the years 1686 and 1687. The first case, was, of a tack of nineteen years let to a person, secluding his assignees. It was contended, that the exclusion of assignees, implied the exclusion of subtenants: But the Court of Session decided, that the tack might be subset. Sir James Roughhead *against* Mudie.—And to the same judgment, the Court adhered, in a similar case, decided the following year: Madder *against* Lord Tarras.

This implied power in tacks, of subsetting, seems to have been understood to be a settled principle of law, till lately. But that material point of public policy was not altered by any act of the Legislature, but by a decision of the Court of Session. It was first considered on general grounds, in the case of the Earl of Peterborough *against* William Milne, decided 8th March 1791. A missive of tack to endure nineteen years, which made no mention of assignees, or subtenants, was, by the Court, found, neither capable of being assigned, nor subset.

There have been several decisions, since, to the same purpose; but as none of them have hitherto been appealed, and received the judgment of the House of Peers; till then, it

is understood that the law is, as interpreted in the case of Milne above mentioned.

The writer of this paper, had himself a similar question decided against him last year, by the Court of Session; and, considering the judgment to be erroneous, and such as would not be supported by the Court of Review, he appealed it; but the matter was, before a decision of the Peers, submitted to arbitration. He recommends, that the first similar case that occurs, should be appealed by a subscription of farmers. And he cannot help thinking, that it would be more conducive to the improvement of the country, if all restrictions against assigning and subsetting were abolished, than that the free disposal of property should receive, by implication, additional fetters.

A. S.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Mischief arising from Thistles and other Weeds by the Sides of Roads and Fences.

GENTLEMEN,

I WISH you would, through the channel of your Magazine, point out the mischief arising from the slovenly practice, of allowing thistles, and other bearded weeds, to grow and shake their seeds by the road sides, and along the whole line of fences in many farms, and which are annually carried by the winds into the adjoining fields, where they prove a fruitful source of mischief. Were a little more attention paid to this subject, and to the kind of hay-seeds sown, much expence and labour would be saved, and fewer absurd complaints made, of the tendency of particular fields to run to weeds. It is to slovenly practices, that dirt is owing: "Whatsoever a man soweth, that shall he also reap:" Whoever sows bad hay-seeds, will reap the natural produce; and *vice versa*. I hope, at no distant period, to see a law, making dirty farmers liable for the damage done, by their bad management, to their cleanly neighbours.

Yours, &c. R. S.

TO

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

The Effects of Lime, in destroying Heath, and producing White Clover.

GENTLEMEN,

HAVING observed, in many parts of the hills and uplands, where shell lime has accidentally fallen, that the heath dies, and white clover rises in its place; I am inclined to think, that the application of a very light dressing of quick lime, upon newly burnt heath grounds, would, without tillage, or any other expence, at once destroy the heath, and cover the surface with that valuable plant. Indeed, I see no reason to doubt it; for, if lime destroys heath in a healthy uninjured state, it will certainly do it more readily after burning, especially if that operation is done at a time when the plants are in a growing state. The insertion of this in your Magazine, may be the means of procuring information, of some successful experiments, made upon a subject, of much interest to the proprietors and occupiers of heath lands. I am, Gentlemen, yours,

A FRIEND TO IMPROVEMENT.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Whether Large or Small Cattle are most profitable.

GENTLEMEN,

OBSERVING the 14th Query in your first Number, respecting the grazing of cattle, I shall state a few particulars, in answer, founded upon my own experience. If they contain any thing worthy of notice, they are at your service.

Query, 'Whether are large or small cattle most advantageous on a grass farm?'

The answer depends almost entirely on the soil; for the better that is, the larger ought the cattle to be. When grazing for the flesher, I have generally found the best returns, by regulating the size of the cattle, according to the soil, as

under:—Land requiring three acres to fat a middle-sized beast, or from 18 to 24 stone; when two acres would fat a beast, as above, from 24 to 30 do.; and when one acre would do it, cattle from 30 to 40 do., or upwards; counting 16 lib. English to the stone.

A grazier, who wishes to make the most of his business, will take care to buy his cattle from an inferior soil, of a good kind (or breed), and not above the market price: If young cattle be taken from a good to a worse soil, they are apt to become stinted in the growth; and, if old enough to feed for the butcher, they will not feed so kindly as those from a worse soil. On the other hand, if cattle be brought from a very poor soil to a good one, they will likely be too small in the bone, to give good returns. I am, however, of opinion, that the grazier's profit does not depend so much upon the size of the cattle, as upon the choice of a real good breed, of a fit age, and from an inferior soil. I am, Gentlemen, with respect, yours,

22. *Mar.* 1801. A CLYDESDALE FARMER.

On Waste Lands.

FROM the sense in which the term *waste lands* is used, in some parts of your Magazine, it is probable that many things have been absurdly projected, both in politics and agriculture, from an inaccurate idea as to the term.

With some, it has been understood, that William the Norman, and his successors on the throne of England, threw large quantities of land into forests, parks, and chases, for the amusement of hunting, in different parts of the kingdom, where they might either generally or occasionally reside; and that these constitute the *waste lands*. And as his Majesty gave up his hereditary revenues in this kingdom, confining himself to the civil list; on this idea, there could be no harm in disposing of them, to defray the national expence, burdened always with the present leases, &c.; and it might be believed, that the purchasers would improve these themselves, if sold in proper lots, and thereby benefit the nation, besides the price going into the treasury, to reduce the national debt. It is said, the value of these lands amounts to many millions.

But

But if, on the other hand, *common* lands, in the neighbourhood of a town and manor, which have been pastured, rather than brought into a state of cultivation, because of the multitude of interests, and difficulty of management, are to be understood as *waste lands*; then, a sale of them, and putting the money into the public purse, would be an injustice, equal to that of seizing on a private person's estate, manor, or barony. And the matter to be considered, is, What is the best and cheapest mode of management? On this it occurs, that a statute, for all England together, similar to the act for that purpose in Scotland, 1695, c. 3, might have the best effect. By this act 'it is statuted and ordained, That all commonties, excepting commonties which belong to the King in property, or to Royal burghs in burgage, may be divided, at the instance of any having interest, by summons (process) raised against all concerned, before the Lords of Session, (Supreme Court of the jurisdiction), who are, by the said act, empowered to discuss the relevancy; and to determine upon the rights and interests of all parties concerned; and to value and divide the same, according to the value of the rights and interests of the several parties concerned; and to grant commissions to Sheriffs, Stewards, and their deputes, and Justices of the Peace, or others, for perambulating, and taking all other necessary probation; which commission shall be reported to the Lords, (or Supreme Court), and the process shall be ultimately determined by them.'

By this act, the Court are also empowered, either to divide mosses which happen to be in the said commonties; or, if such mosses cannot be conveniently divided, to declare, that they shall remain common, with free ish and entry thereto, (egress and regress), whether divided or not.

The division, where the question is among the common proprietors, is governed by the clause in the statute, *according to the valuation of their respective properties*: But, where the question turned between the proprietor, or proprietors, and those that had servitudes of common pasturage upon the property, the rule mentioned in a preceding clause of the act took place, by the former practice, *according to the value of the interests of the several persons concerned.* Hence, proprietors were allowed a *præcipuum* for their right of property, over and above the share, on account of their own, or their tenant's possession, by pasturage. But now, the superfice is only divided, without prejudice to the property; the

interests of those having servitudes of pasturage, are ascertained by the number of beasts that graze thereon, and, if this is indefinite, according to the number that each of them can fodder, in Winter, upon his own dominant tenement.

In the division of commonties, the share to be allotted to each heritor, is appointed to be made next adjacent to his property.

So far the Scots statute, which extends only to that country. Commonties may also be divided by arbitration.

This division being authorised, a clause might also be inserted, whereby any of the parties could compel the other to concur in inclosing, and pay his proportion of the expence, either in money or land.

These powers once granted by a single statute, the matter would operate gradually itself; till, in a short time, none of these commons would be left; and the proprietors might improve their shares at pleasure.

It appears, from Blackstone's Commentaries on the Law of England, that both kinds of land, mentioned above, are understood by the term *waste lands:* Thus, in b. ii. p. 14. notice is taken of '*forests* and other *waste grounds*, which were omitted to be appropriated in the general distribution of lands: and as disturbances and quarrels would frequently arise among individuals, as to the acquisition of this species of property by first occupancy, the law has therefore wisely cut up the root of dissension, by vesting the thing itself in the Sovereign of the state, or else in his representatives, appointed and authorised by him, being usually lords of manors.'

From b. iv. p. 415, it appears, these were at least extended considerably by William of Normandy, and his successors.

As to the other kind, more properly termed *commons*—'in the division of a *manor*, after mentioning the *demesne* lands occupied by the lord—the *charter land* given to the vassals—the *folkland* held at the pleasure of the lord, who became afterwards *copyholders*—' it is added, 'the residue of the manor, being uncultivated, was termed the *lord's waste*, and served for public roads, and for *common of pasture* to the lord and his tenants.'

The Scots having so early provided for the division of these last, there are hardly any commons remaining in that part of the kingdom: But there being no general law for that purpose

pose in England, private acts or statutes have been found necessary in every particular case. To put England, therefore, in the same situation with Scotland, in this respect, appears to be all that is necessary.

1. *December* 1800. MILONIDES.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Queries respecting Shell Marl.

GENTLEMEN,

HAVING met with no analysis of shell marl, which went farther than merely to ascertain the quantity of pure calcareous earth contained in it, give me leave, through the channel of your useful publication, to request answers to the following queries.

As the calcareous earth of shell marl, is evidently the production of different species of aquatic animals, when these creatures die, what becomes of the animal substance of their dead bodies? Does the fertilizing quality of shell marl depend solely on its calcareous matter? and does it contain nothing which arises from the decomposition of these animal bodies?

I am led to put these questions, from this circumstance, that the effects of shell marl upon land, appear to me to be more analogous to the effects of dung, than of lime.

I am, Gentlemen,

Yours, &c. E.

FOR THE FARMER'S MAGAZINE.

On some of the Causes which retard the Progress of Agricultural Science, and Hints for its Improvement.

THE prosperity of States, and the welfare and happiness of mankind, depend more perhaps on the successful prosecution of Agriculture, than on any other art; for, on the produce of the ground, must man ultimately depend for his subsistence; yet no science has been slower in its progress towards perfection. Hitherto, one great cause of the slow

progress

progress of this art, has been, that, whilst its theory has been the subject of the ingenious speculations of closet philosophers, its practice has been generally confined to the unlettered peasant. But we may now hope, that, from the great increase of the capital employed in agricultural pursuits, and from its having, in a great measure, become a fashionable study, many farmers are now capable of joining theory with practice, and of investigating the philosophical principles on which the successful prosecution of it must depend.

Too many, however, of the speculations of agricultural writers, are directed, more to conjectural calculations, than to an accurate arrangement of facts and observations. Disputes about the proper size of farms, or calculations to ascertain what proportion of the produce ought to be paid as rent, have been the subject of many ingenious disquisitions. But these calculations are, for the most part, more apt to mislead, than to inform; as no rule, founded on the most accurate calculations on one farm, can be *strictly* applied to others: for I would almost venture to say, that no two farms can be found so exactly similar in soil, situation, climate, exposure, or distance from manure or markets, that the expence of working them can be precisely the same; and a very small difference in any of these circumstances, will occasion a great one in the expence, and consequently in the profit of the farmer.

By a numerous collection of facts and experiments, the general laws of the different branches of natural philosophy have been traced out and explained, and afterwards applied to illustrate the relations betwixt the different phænomena.

One reason for the very slow progress made in agricultural improvements, is, the difficulty of making experiments with the necessary precision, and distinguishing the various causes and circumstances which influence their success or failure. We cannot subject the hidden process of vegetation to such minute inspection, as many of the other phænomena of nature. Experiments, which require for their completion a few hours, or at most a few days, may be conducted with more accuracy, and the action of different substances on each other more distinctly traced, than where they require months, and seasons, and even several years, to complete them, subjected to the endless variety of climate, exposure, state of the weather, and various extraneous circumstances. Here, we are always in danger of applying, to one cause, effects

effects which may be produced by very different ones. Experiments may succeed in one variety of soil, in one situation, and in one season; while a change in any of these, may, on a second trial, occasion their total failure.

Nothing conduces more to the advancement of any science, than accurate definitions and explanations of the terms employed; and perhaps, in no science, is the want of such definitions more felt than in agriculture. From the vague manner in which soils are often described, and the different acceptation of the same terms in different counties, it is difficult for a farmer, when he reads an account of the agriculture in a different county and soil, to judge what relation such a soil may bear to the one he himself possesses. What is called clay, in some counties, would be accounted loam in others; and a free soil, in one, would be accounted a stiff one in another. Mr A. Young remarks *, that in some parts of England, any loose clay is called marl; in others, marl is called chalk; and, in others, clay is called loam.

It would conduce much to the accuracy of agricultural experiments, if any of your readers, versant in chemistry, would point out an easy method of analyzing soils, and such as could be performed by most farmers; so far, at least, as to ascertain the proportion of the different earths contained in them. An accurate table of soils might then be formed, arranged according to the quantities of their component parts; and then, a farmer, having analyzed his own soil, could at once point out to which number of the table it might be most properly referred. Such a table would be of the highest consequence to agriculture, as it would afford the only sure mode of distinguishing, and comparing, the different varieties of soil. Until such an accurate table is formed, it might, perhaps, be of some use to attempt a classification of soils, from their most prominent and distinguishing qualities. Mr Kirwan, in his valuable Essay on Manures, informs us, that the principal ingredients in all soils, are, argile or pure clay, silicious or sandy earth, and calx, or calcareous substances. To these may, perhaps, be added, that sort of earth into which all putrefied animal and vegetable substances are at last resolved, and which I would call loam. Pure clay (says Mr Kirwan) feels smooth, and somewhat unctuous; if moist, it adheres to the fingers, and, if sufficiently so, it becomes tough and ductile; in the fire, it hardens, and burns to brick. By sand, is meant, small loose grains, of great hardness, not cohering with water, nor

* First Eastern Tour. Second Bath Mem.

nor softened by it. It is generally of the silicious kind, and therefore insoluble in acids. Calx, or calcareous earth, includes chalk, and all stones that burn to lime. They are easily distinguished, by their property of effervescing with acids. Light moorish, mossy, or boggy soils, consist chiefly of the ligneous roots of vegetables, more or less decayed.

But soils ought not only to be distinguished by their component parts, but also by the different subsoils on which they are incumbent; for these cannot but have a very great influence on the soil, and its productions. One soil on one subsoil, and a perfectly similar soil lying on a different subsoil, may require very different modes of management, and may have very different effects on the growth and luxuriance of the same plants. A *clayey loam*, may be defined, a clay mixed with rich black earth, called loam, but in which the clay evidently predominates. A *loamy clay* consists of a similar mixture, but in which the loam predominates. It is impossible to describe all the endless variety of soils and subsoils: I shall only attempt to mark some of the principal divisions.

SUBSOILS may be divided into,

No. 1. Cold clayey till, impervious to water.

2. Gravelly, or sandy bottom, pervious to water.

3. Freestone gravelly, do. do.

4. Limestone, or calcareous gravelly, do. do.

5. Loose whinstone rock, or slatey, do. do.

SOILS may be classed as follows:

LOAM, or BLACK RICH EARTH,

on a Subsoil of

No.

1. 2. 3. 4. 5.

CLAY,

CLAY,

DISTINGUISHED, BY ITS COLOUR, INTO

No. 1.	No. 2.	No. 3.	No. 4.
WHITE, *on a Subsoil of* No.	BLUE, *on a Subsoil of* No.	YELLOW, *on a Subsoil of* No.	BROWNISH RED, *on a Subsoil of* No.
1. 2. 3. 4. 5.	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

CLAYEY LOAM, of Colour No. 1. 2. 3. 4. *on a Subsoil of No.* 1. 2. 3. 4. 5.

LOAMY CLAY, of Colour No. 1. 2. 3. 4. *on a Subsoil of No.* 1. 2. 3. 4. 5.

SAND or GRAVEL,

DISTINGUISHED INTO

No. 1.	No. 2.	No. 3.
WATER, SAND *or* GRAVEL, *on a Subsoil of* No.	FREESTONE GRAVEL, *on a Subsoil of* No.	WHINSTONE *or* SLATEY, *on a Subsoil of* No.
1. 2. 3. 4. 5.	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

GRAVELLY *or* SANDY LOAM, of No. 1. 2. 3. *on a Subsoil of No.* 1. 2. 3. 4. 5.

LOAMY SAND *or* GRAVEL, of No. 1. 2. 3. *on a Subsoil of No.* 1. 2. 3. 4. 5.

CALX,

DIVIDED INTO

No. 1.	No. 2.
LIMESTONE GRAVEL, *on a Subsoil of* No.	CHALK, *on a Subsoil of* No.
1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

MOORISH or MOSSY SOIL,

on a Subsoil of No. 1. 2. 3. 4. 5.

Each

Each of all these soils are again of different depths, situated in different climates, in different exposures, and of different degrees of declivity, &c. &c.: All which circumstances ought to be noticed in the account of agricultural practices or experiments. Though a numerous collection of facts and experiments, is the first and most necessary foundation of all agricultural science; it is also highly necessary, that some distinct plan or system should be laid down for the arrangement of these facts, that their relation to each other may be traced out and explained. A collection of separate and unconnected facts, would be somewhat like a dictionary, in which we may find each different word of a language explained, but by which we could never understand the language, without the help of a grammar, or theory of it. It is with much diffidence, that I would point out a plan to the *Conductors of the Farmer's Magazine*, which may appear to them visionary, but which, I apprehend, would tend to the advancement of agricultural knowledge. Let your correspondents be desired to give an account of the best mode of management of a farm, containing a given number of acres, suppose 400; consisting, principally, of one variety of soil and subsoil. From the accounts transmitted to them, let the Conductors publish that account which appears to them the best mode of management. Let these accounts be founded on existing practices, and on plans which have been actually followed out. This plan, if accurately pursued, would furnish the most complete information in agriculture; and, from the perusal of these accounts, a farmer would have it in his power to select such a mode of management, as appeared most fitted for the soil he himself possessed.

In these accounts, the information should be arranged under distinct heads or divisions; such as, 1*st*, the species and rotation of crops; and, 2*d*, the management of the live stock, whether working cattle, breeding, or fattening stock. In the history of each crop, let as particular an account, as possible, be given of, 1*st*, Preparation for the crop, mode of ploughing, the instruments employed, the season when ploughed, &c.: 2*d*, The species, and distinguishing qualities of the seed, the season when sown, the mode of sowing, and the quantity sown: 3*d*, Management, when growing: 4*th*, Harvesting, and mode of using it, if used on the farm.

An account, very similar to those here suggested, is contained in those articles in your Magazine, entitled, *Strictures*

on

on Farm-Management near London. In these accounts, the writer cannot descend too much to particulars, as very much often depends on the minutiæ of practice. One obstruction to the progress of agricultural knowledge, arises from the difficulty there is in giving an accurate account of the practices of any particular district, without using those terms in its provincial dialect; which, though well understood by the writer, are often quite unintelligible to the farmer in a different part of the island. No term of that kind ought to be used by any writer, without attempting, at least, to make it generally intelligible. Another source of confusion, the discrepancy of weights and measures, would also be easily obviated, if every writer would take the trouble to reduce his provincial measures and weights to the standard of the Winchester bushel, the English statute acre, and the English pound or hundred weight. Were this done, it would very much enhance the value of the information contained in that article of the Farmer's Magazine, *Agricultural Intelligence.* It would only occasion some little additional trouble to your correspondents at first, but would make their information far more intelligible to your readers. No writer has paid greater attention to accurate arrangement, minute particulars of practice, and intelligible explanation of provincial terms, than Mr Marshall; and no books on agriculture, perhaps, have been more extensively useful, than his Rural Œconomics. I would also request the attention of your Chemical readers, to the investigation of the qualities and properties of manures, on philosophical principles; for it is really astonishing to observe the very contradictory opinions, and practices, on this very important subject.

S.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Means of promoting a Spirit of Improvement in a Country.

GENTLEMEN,

I HAVE often thought, that it would tend much to promote the most important interests of the country, if persons were appointed, annually, to draw up *statistical reports* of the improvements, either actually carrying on, or likely to be executed, in each county; and were such reports both printed in the

the newspapers, and other periodical works, and laid before Parliament. The publication of such statements, might not only have the effect of rousing a spirit of emulation in the different districts, from which the happiest consequences might be expected; but, thus, one part of the country might obtain very important suggestions from another, with which it has no immediate means of intercourse. For instance, the mode of husbandry as practised in the fen counties of England, as Lincolnshire, Cambridgeshire, and Huntingdonshire, has been introduced into Caithness this year, and is evidently more likely to answer in a Highland district than any other. If that system succeeds here, which there is every reason to believe will be the case, what an advantage would it not be, to have the knowledge of that circumstance circulated at once over all the Highlands? In the same manner, it is of the utmost consequence, to have it universally made known, that the Cheviot breed of sheep will succeed fully as well in the North, if not better, than the common Black-faced. There are already several thousands of that breed in Caithness and Strathnaver, thriving as well as upon the Borders of England and Scotland; so that the point cannot be disputed. The difference to the landlord and the public, is very great; for the Cheviot breed, when once fairly established, can afford to pay double the rent of the Black-faced. Highland, and other proprietors, therefore, ought to attend to that circumstance, when they have sheep farms to let, and should encourage farmers from the Borders to take them. The success, also, that has attended the introduction of the red oat into the North, which is an earlier grain than the white, the grey, or the black oat, which is much less apt to shake, much more equal in point of quality or sample, (having in general but one pickle), and much more productive in regard to meal, ought to be as generally known as possible. But the great object of the proposed statistical reports, is, that the Government and the Legislature of the country should know what improvements are going forward, and what public encouragements are necessary to promote them. Any Government that would set out on the principle of promoting public improvements, would necessarily be entitled to the confidence of the country; and there is no way in which a Legislature can spend its time, or expend a portion of the public money, with more satisfaction, or to more advantage, than by encouraging such a spirit. Without dwelling, however, on these points farther at present,

sent, I shall now proceed to give a short sketch of the various improvements which have been carrying on, in the course of the year, in this remote corner; which, I hope, will sufficiently explain the nature of the measure above suggested. And hoping that similar accounts will be drawn up, of the exertions made in other counties, which it will give me much pleasure to peruse, I remain,

Gentlemen,

Your very obedient servant,

Thurso, 17. *Sept.* 1801.

A Friend to Public Improvement.

A Note of various Measures, calculated for the Improvement of the County of Caithness, carrying on Anno 1801.

1. Mr Headrick, and Mr Bushby the Mineralogical Surveyor, have been sent North, by the Barons of Exchequer in Scotland, to bore for Coal at *Scrabster*, in the neighbourhood of *Thurso*, on lands belonging to the Crown, where there is a great probability, that a very valuable Mine of Coal will be discovered.
2. Mr Telford, a respectable and intelligent engineer, has received orders from the Treasury, to survey the harbours on the coast of *Caithness*; in particular, those of *Wick*, *Thurso*, and *Dunbeath*; and to estimate the expence of making the same. Some public assistance may be expected for carrying on these important undertakings; in the promotion of which, the Directors of the British Fishing Society, and Mr Vansittart, Secretary to the Treasury, have much interested themselves.
3. For the purpose of improving the Fisheries on the coast of *Caithness*, Government has sent north, free from expence, some *Dutch Fishermen*, to be employed in the Herring Fishing at *Wick*.
4. Mr Charles Abercrombie, so celebrated for his skill in lining out roads, has received orders from Lieutenant-General Vyse, authorised for that purpose by Lord Pelham, Secretary of State for the Home Department, to line out the roads, about the *Ord*, and hills of *Berridale*, and along the borders of *Caithness* and *Sutherland*, so as finally to settle the direction, throughout a tract of

country, which is reckoned the most difficult to make of any in Scotland.

5. Application is made to Government for authority to lay out a sum of money, this year, in making the roads of the County, to be repaid out of the balance of the Forfeited Estates in Scotland; with a view, not only of carrying on so essential an improvement, but also of furnishing a number of industrious labourers with the means of subsistence.

6. A person from PERTH, well acquainted with the LINEN TRADE, has examined, in the course of this year, the advantage which CAITHNESS possesses for carrying on that Manufacture; and has placed them in so striking a point of view, that no doubt is now entertained of its being soon established on a large scale, in the County. Some Flax is already raised, and great quantities of Yarn spun, wove, and bleached, to as great perfection, as in any part of Scotland.

7. When the Harbour of DUNBEATH is made, it is proposed to carry on a regular intercourse with the opposite coast of MORAY and BANFF, for the purpose of importing lime from PORTSOY, &c. and for exporting cattle, too large for sending round by the heads of the Friths, or in too good condition to be driven to any great distance, through a rugged country.

8. A number of Farmers from the LOTHIANS, and other Southern Counties, have been examining the Farms in CAITHNESS, where it is supposed that several of them will settle. They have every inducement to do so, as the crops in Caithness were abundant for the two last years, when they failed in so many other districts.

9. ROBERT GERMAN, from the county of Cambridge, has come to Caithness, with the peculiar sort of Ploughs, adapted for trying the Fen Husbandry, as practised in Lincolnshire, Cambridgeshire, &c. This is the most profitable of all farming; producing, at a small expence, great crops of grain, Grass, Rape, Tares, Turnips, &c. by paring and burning mossy lands, not worth, in their present state, a shilling *per* acre. There is every reason to hope, that this important improvement will answer, equal to the most sanguine expectations of those by whom it has been introduced.

10. Mr STEPHENS, junior, proposes being in CAITHNESS in October, to examine to what extent Watering of Land, and

and Draining, can be carried on in the County; that such essential improvements may be pursued, with proper spirit, in the course of next season.

11. The Resolutions adopted by the Gentlemen of the County, last year, for establishing *Winter Herding*, preventing the casting of Feal and Divot, and including other Branches of Police, have already had so beneficial an effect, that it is resolved to enforce them as much as possible. Indeed, all the intelligent Farmers in the County are so sensible of the advantages resulting from them, that it is hoped no compulsory measures are necessary, to insure their observance.

12. Mr SCOTT, a respectable Builder from Edinburgh, is employed in erecting houses in the New Town of THURSO. He has discovered a very valuable Free-stone Quarry in the neighbourhood, which will be of the utmost service in promoting the building of that town; and it may become an article of export to London, and other places, being of an uncommon good quality. The town of Thurso now contains about 2000 inhabitants; and has increased about 400 within the last ten years.

13. The trees which have been planted in the hilly parts of the County, promising to answer, it is proposed to carry on Plantations there on an extensive scale, and to establish Nurserymen, by whom the Gentlemen of CAITHNESS may be supplied with young trees, accustomed to the soil and climate, and consequently more likely to thrive than any that can be imported.

14. Some promising veins of COPPER, and of LEAD ORE, and specimens of the most beautiful MARBLE, having been discovered in different parts of *Caithness*, Mr HUTCHINSON, of Alstonmoor, in Cumberland, came north to examine them; and is so much pleased with their appearance, that he intends, in conjunction with his friends, to establish a Company for working such as are likely to be the most productive and valuable.

15. The introduction of the CHEVIOT BREED of SHEEP has succeeded so completely, that it is proposed to increase them considerably. The flock of one proprietor already amounts to between 3000 and 4000; and he proposes augmenting the number to 10,000, which will probably be the largest flock, of so valuable a sort, in the island. Materials will thus be furnished for the e-

stablishment of a Woollen Manufacture, which has been long much wished for.

16. Though SHEEP must be the staple article in the hilly districts, yet CATTLE ought to be principally attended to in the plain country, until there is a market for considerable numbers of fat Sheep. The Cattle of *Caithness* are much improving in quality, particularly those which have been crossed with the *Galloway Breed.* In order to accommodate the Drovers, who may wish to purchase them, and that the Cattle may be brought to their proper value, it is proposed to hold stated Fairs, in the beginning of the months of June, August, and September, which several considerable dealers have already engaged to attend.

17. A regular and frequent communication with other places, is essential to the improvement of any district. To obtain that advantage for *Caithnets*, it is necessary that a Daily Post should be established to the two principal towns; and it is to be hoped, that an intended application to the Postmaster General for that purpose, will be successful. It is farther proposed, to have packets or vessels, that will sail, at fixed periods, from *Leith*, to the towns of *Wick* and *Thurso*; and also to carry on an intercourse with the Metropolis, by means of the fishing smacks which supply the London markets with Cod and other Fish, and which rendezvous, for several months in the year, at *Scrabster Road*, near *Thurso.*

18. Instead of applying, either to Courts of Law, or to Parliament, for authority to DIVIDE the COMMONS, it is not unusual, at present, to refer the same to the decision of one or more Gentlemen of the County, who are not interested in the division; and so much are the Proprietors, in general, disposed to promote such measures, that a favourite toast here is likely soon to be realized—"May a *Common*, be an *uncommon*, spectacle in CAITHNESS."

19. The late Scarcities have pointed out the necessity of improving the Agriculture, and extending the Cultivation of the Kingdom. In regard to the latter point, there is every reason to hope, that the County of CAITHNESS will not be deficient. A great extent of *Waste Lands* have been improved, this year, in various parts of the district; and the crops promise amply to repay the expence,

pence, more especially on *Mossy Lands.* The spirit of inclosing and cultivating Wastes is now so prevalent, that one Gentleman has pledged himself, that he and his tenants shall improve *Five Hundred Acres* in the course of next year; and *a Subscription Paper* is proposed, to ascertain the quantity which the different Proprietors of the County will undertake to improve, in the course of next season.

20. As EDUCATION is the basis of all permanent improvement, it is intended, immediately, to erect an ACADEMY at THURSO, where all the principal branches of education will be taught by proper masters. A BOARDING SCHOOL for Girls has already been established there, and is conducted much to the satisfaction of the Town and Neighbourhood; and as THURSO will soon rival, in regard to the important article of Education, any town of its extent in Scotland, that, joined to the Cheapness of Provisions, and other conveniences, must be a great inducement to persons of moderate income to settle there.

It will appear, from the preceding enumeration, what a variety of important Improvements are now carrying on in CAITHNESS, which the late favourable seasons, and the high price of the articles which the country produces, have greatly tended to promote. In the course of last Spring, and Summer, from 400 to 500 labourers came in from the neighbouring Counties in quest of work; and hitherto they have all found occupation in Building, Inclosing, Ditching, Trenching, Roadmaking, and other substantial improvements. Indeed, such has been the happy situation of CAITHNESS, during seasons which have unfortunately borne so hard on other places, that no person, either living in it, or who chose to come into it from any of the neighbouring Districts, have felt the want, either of food or employment.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Obstacles to the Cultivation of Waste Lands, and the Best Means of Removing them.

GENTLEMEN,

AMONG the variety of useful matters treated of in the progress of your work, I perceive many powerful arguments for the

the cultivation of waste lands. This subject has been so fully discussed by several able writers, that it is hardly possible to offer any thing new upon it. Yet it must appear surprising, that, while this country has been so frequently threatened with all the horrors of famine, no general nor effectual measures have been adopted, to remove the obstructions which stand in the way of improving waste lands. This must, in part, be ascribed to the nature of our Government, which is founded on the principle, that all private property, from that of the meanest cottager to the highest Peer, is sacred and inviolable; a principle which forms the bond of union in every well ordered community, but which, in matters of this sort, renders the Government averse from adopting any general regulations, without the concurrence of the parties interested.

That individual parties, as well as the public at large, are deeply interested in reducing all common and intermixed possessions into severalty, is a proposition so evident, that it requires no illustration. Without this, improvement is not only difficult, but impossible. Another step, of great importance for the general improvement of the country, would be, to reduce all public burdens, which affect land, to a known and fixed standard; so that the tenant, or cultivator, might know his situation, and the exact amount of his rent. A public burden, which operates as a tax upon the increased produce of land, operates also as an effectual bar to its improvement.

Evident as these propositions appear in this part of the island, it has been found extremely difficult to reconcile the many jarring interests among our Southern neighbours, so as to carry them into effect. On the one hand, the poor, who have established a right over commons, or a property in small intermixed patches of land, always look towards a general division with an evil eye. Though they derive very little benefit from their present mode of occupancy, that little is got without much labour, or expenditure of capital. They are much attached to old usages, which, however useful, or even of absolute necessity, at the commencement of agrituculre, are utterly incompatible with its present advanced state. They regard every scheme of division as operating in favour of the rich, and against their interests; because, though their share should be fairly allotted to them, they are incapable of making an advantageous use of it, from want of capital to construct the necessary buildings, to make drains and

and fences, and to purchase seed and manures. These circumstances occasion many difficulties in reconciling the interests, and even prejudices, of this numerous class of men, with any scheme of general division. But, though the difficulties are great, it is hoped they are not insurmountable, but such as a wise and enlightened Legislature may remove.

Another great obstacle to the reduction of common and intermixed lands into severalty, arises from the difficulty of adjusting the claims of the lords of manors, and of the clergy, or those who have a right to the tithes. The latter, especially, often discover a degree of irritability at the mention of this subject, and are apt to raise a cry, that the Church is in danger.

No wise or just man would countenance a measure, whose effect would be, a violation of the rights of any individuals, or class of men. In this case, it is not proposed to extinguish any man's right, but merely to change the mode by which it is exercised, so that it may not operate as a bar to improvement. The payment of rent by the farmer, for the land he occupies, cannot be considered as an obstacle to improvement; on the contrary, it operates as a stimulus to his exertions, because he knows, that all he can acquire beyond the rent is his own. The rent is also fixed by a voluntary agreement between the farmer and his landlord; and the former has no reason to complain, that, by entering into a farm, he has been surprised into engagements, the nature and extent of which he had neither foreseen nor appreciated. Hence, all services in place of rent and tithes, as their value and amount must be always uncertain, and inconsistent with the industry of the farmer, should be commuted into a rent that is known and fixed.

In Scotland, it has been ascertained, and received as a maxim, even in legal proceedings, that a fifth of the rent is a fair and just equivalent for the tithe, or tenth part of the produce of the land. Were some such commutation established in the South, the farmer would know exactly the footing on which he stood, because he would know, that whatever rent he had agreed to pay to his landlord, he was bound to pay a fifth part more, or any other proportion that might be settled, to the Church, or proprietor of the tithe. This would extinguish all seeds of dissension between the parties; the rents, and consequently the commutation for the tithes, would soon be increased far beyond their present amount; while the farmer would reap the full fruits of his ingenuity

ingenuity and industry, in increasing the produce of his farm. I cannot see how the Church would be endangered, by a measure which is likely to increase her revenue, and that revenue, too, levied without either trouble or expence. Those who are apt to raise this cry, have an example before their eyes of King Charles I., who was certainly no enemy to the Church; and yet, by his award, he fixed a similar commutation for tithes in Scotland; a commutation which has given universal satisfaction to all the parties interested.

But, without entering minutely into a subject, which probably we, in this northern part of the kingdom, do not fully understand, I shall content myself with suggesting a few arrangements, which may facilitate the cultivation of waste lands among ourselves.

In many parts of the Highlands, and Isles of Scotland, the cultivated land is still occupied in *run-rig*, or *rig and rennel*, as it is called in some places. The waste, or pasture land, is grazed in common, by the cattle of the several tenants who are concerned in the cultivation of what is in crop. Nay, in some places, not only different ridges, or patches, are cultivated by different people, but the same ridge, or patch, is often divided among from twelve to twenty people, who cultivate the several parts of it. In some cases, these patches are changed every year; and, in most cases, they are changed every third year: so that every individual of the society comes, by rotation, to the possession of these several patches. This *societas arandi*, or cultivation by united efforts, is the plan that occurs to every rude people, when they first begin to cultivate the earth: but it is utterly incompatible with an improved system of agriculture; and, while it continues, must confine this most important art to its first and rudest efforts. It is a genuine exemplification of the system of equality, so much talked of; for it effectually disqualifies any individual from rendering his situation better than that of his neighbours, by superior ingenuity and industry. All the members of such societies are perpetually equal; but the equality consists in laziness, poverty, and wretchedness. Happily, it is in the power of proprietors themselves, to remedy these evils, by lotting out farms in a proper manner; constructing suitable farm offices; and assigning to each individual the tract which he is to occupy.

In the county of Caithness, which is fast rising into importance as an agricultural district, and in some other places; much

much of the cultivated land is not only occupied in run-rig by several cultivators, but there are large tracts, frequently of the best soil in the district, which are common to different properties. The effect of this is, that the tenants, all round these commons, are tempted to keep a larger stock of cattle than they can subsist during Winter. The animals are half starved in Summer; and, in Winter, they either perish, or are reduced to a very inferior value. They also impel the tenants to the hurtful practice, of paring turf from the commons, to be used as manure for the cultivated land: by which the latter is injured, from a too great accumulation of moorish soil; while the unfortunate waste lands are subjected to the martyrdom of St Bartholomew, in being flay'd alive.

From your Work, I perceive the gentlemen of Caithness have adopted measures for preventing the destruction of their waste ladds, by this pernicious practice of flaying, or paring turf. But all their measures will prove ineffectual, unless the commons are divided, and rendered individual property. Indeed, unless property, and occupancy of land of every species, whether by proprietors or tenants, be reduced into severalty, it is vain to look for improvements. Happily, in this country, lands that are common to different properties may be divided, by an amicable arrangement among the proprietors themselves; and they can then proceed to allot the lands, so divided, among their tenants, in the way that may be found most convenient.

The practice of entailing, which has been carried to a great excess in Scotland, operates as a powerful obstacle to the improvement of land. It reduces a proprietor, or rather manager of an estate, to the condition of an annuitant; who has no power of controuling those circumstances, by which his situation, and that of those who are under his direction, may be meliorated. If the occupant of an entail has a family, the estate goes to one; and he is impelled, by irresistible necessity, to save all he can, with a view to provide for the younger branches of his family. If he has no children of his own, the estate descends, perhaps, to some person with whom he has no natural connexion: And he has no inducements to labour, or to expend money in improvements, of which another is to reap the fruits.

With an absurdity altogether preposterous, many of these entailers have presumed to limit, if not extinguish, the power of

of their successors to grant leases; and, in many cases, have tied them down to that system of management which appeared to them the best when the entail was executed. Thus are the modes and practices of rude and ignorant times perpetuated, and large tracts of improveable land consigned to barbarism. On this point, legislative interference would be necessary: and it would certainly contribute to the improvement of the country, to permit the occupants of entails to grant such leases, and to make such alterations in their system of husbandry, as could be proved to be manifestly for the advantage, not only of themselves, but of their successors.

The services which are still paid, in many districts, in place of rent, divert the farmer's attention from his proper business, and operate as a bar to improvement. Landlords have been much cried out against, for continuing these services; but unjustly. They arose out of the state of society in remote times; and where that state continues, they can hardly be dispensed with. In districts where every individual is a farmer, no man will work for wages: and a proprietor has no choice, but to stipulate with his tenants to perform any extra work that may be necessary for his accommodation, and which may exceed the power of his ordinary domestics to execute.

But, in districts where all are farmers, there is seldom any good farming. Were good roads constructed, and the condition of many of these small farmers changed into that of day-labourers and tradesmen, their condition would be much more comfortable than it is at present; and their work, under the direction of skilful farmers, would be much more productive, than in its present desultory and confused mode of exercise. Landlords would soon find their advantage in converting all these services into a fixed rent; because they could always procure enough of labourers, not only for their ordinary work, but also for any extraneous exertions which their accommodation might require. These services are much more hostile to the true interest of landlords, than to that of their tenants; but there are some situations which leave them no choice.

Thirlage to mills is a grievance which has long fettered agricultural exertion, in many districts of Scotland. But as this is likely to be abolished, or at least very much alleviated, in consequence of a late act of Parliament, it is unnecessary to trouble you with any remarks upon it.

I have thus thrown out, in a very desultory manner, my opinion of the steps necessary to be taken, both on the part of the Legislature, and of many individual proprietors, with a view to render the improvement of lands already cultivated, and the reduction of waste lands into cultivation, practicable, or possible. We must not look for any permanent relief from the pressure of our present difficulties, from great crops in this or that country, beyond seas; but from increasing the amount of our agricultural produce, by introducing a more efficient system of cultivation into some districts, and enlarging the extent of productive surface in all. Having detailed the previous steps towards accomplishing this object, I beg leave farther to suggest,

That I conceive, in times such as these, our Legislators should not confine their exertions within the simple removal of obstructions to cultivation; but should exhibit some direct stimulus to the improvement of waste land.

For several years past, the people of this country have been paying at the rate of from four to seven millions annually for foreign corn. This is so much of the national wealth wasted, or extinguished, for ever. It has gone to stimulate the agriculture of nations who have shewn dispositions, not very friendly, towards us. Had it been laid out in the improvement of our own lands, it would have produced a much more ample supply of food, and laid the foundation of future increase in wealth and population.

Suppose, then, the experiment were tried, of laying out only a small portion of the money, which is annually drained from the country, for foreign corn, in the way of premiums for the cultivation of waste land:—I cannot foresee any evil that could possibly result from this project; and it is likely to be productive of the best effects.

The following is the mode in which I conceive the premiums might be distributed:

1. For every Scotish acre that is gained, by draining lakes, swamps, or by embanking out the sea; or, that is cleared of stones or brushwood; or, that is reclaimed from moss or moor; and is afterwards so far improved, as to produce not less than 4 bolls (Linlithgowshire measure) of any species of corn or pulse - - - - - L. 2 0 0
2. For every such acre that is so far improved as to produce not less than 25 bolls of potatoes - 2 0 0
3. For every such acre so far improved as to pro-

duce

duce not less than 7 tons of turnips, cabbages, or other green crop, - - - - - - - - L. 0 0 0

4. For every such acre that is made to carry not less than 100 ſtones of good hay - - - - - 2 0 0

I assume our Scotish measures, as I am best acquainted with them; but your ingenious readers can easily transfer them into any other standard. I also state the produce, entitled to a premium, much lower than the average which waste lands, after one or two years culture, will actually yield. This is done, that those who have a more obdurate soil to work upon, or are situated in a more ungenial climate, may not be discouraged from making the attempt. It is also meant that every competitor, on announcing his intentions to the Justices of the district, shall be allowed four years from the commencement of his operations; and that he may claim the premium, during any of these years that may seem most advantageous to him.

Having detailed the outlines of our plan, let us examine its effect in raising a supply for national consumption. Suppose two millions should be annually distributed in premiums for corn raised on lands formerly waste; this will add, at least, one million of acres to the cultivated and productive surface of the island;—of much more value to Britain than a distant province, acquired by conquest. Deducting one million of bolls for seed, it will also add not less than three millions of bolls of corn to our fund of national subsistence. These, if imported from foreign countries, would cost not less than six millions of our national capital, extinguished for ever. Hence, by carrying this plan into execution, the public, or nation at large, would save not less than four millions *per annum*; and this, too, without any extinction of capital; but rather by diverting part of her capital into a channel, where it would be perpetually receiving an increase of value.

The only objection I can foresee, as likely to be urged against the vigorous cultivation of waste lands, is, that by diverting seed and manures into such lands, a temporary scarcity may be produced, instead of plenty.

So far as seed is concerned, the objection applies equally to lands already cultivated. Though corn is very scarce and dear this season, I hope none of our farmers have withheld a due proportion of seed for a future crop.

With respect to manures, it is meant, that all competitors for premiums shall be obliged to begin their operations with calcareous,

calcareous, or other mineral manures, if they be within their reach. These will meliorate the land so far, that it will yield putrescent manures, from the straw, and other produce. Thus, there will be very little diversion of the present stock of putrescent manures, from the lands already under crop.

I have thus suggested what appear to me the most likely means of raising a sufficient supply of land produce, for all our national wants. While a single acre remains unproductive, it is a shame that so mighty a nation as Britain, should be obliged to truckle to foreign powers for her daily bread; and meanly to scramble for the crumbs that are scattered by a cautious, perhaps, insulting hand. Let her look homewards, and she will find all her wants amply supplied from her own exertions.

19*th May* 1801. RUSTICUS JUNIOR.

Note.

The Conductors are much obliged to the gentleman who favoured them with the above observations, and solicit a continuance of his correspondence.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Observations on the Use of Lime.

GENTLEMEN,

IN perusing your 5th Number, I observe an inquiry made by a correspondent, as to the effects of lime on different soils, and the best mode of using it. Having practised the Lime Husbandry in different parts of the kingdom, and thought a good deal upon the subject, I take the liberty of offering such observations as have occurred to me, which, though you will receive them in a plain dress, have facts and experience to recommend them to your notice.

All soils, without exception, are benefited by lime, provided due attention is paid to the mode of using it, and the course of cropping afterwards followed, which, in every instance, ought to be gentle; for, whoever expects that land, after the application of lime, will bear a succession of exhausting

hausting crops, without injury, will to a certainty meet with disappointment. It is not my purpose to enter into any chemical disquisition on the qualities of lime, a task greatly beyond my knowledge, and which has already been handled by men better qualified for it. Indeed, I am the less inclined to do so, from a conviction, that the generality of husbandmen will reap more benefit from a few practical hints, conveyed in plain language, than from a thousand volumes filled with theory and technical language.

I begin, first, by stating, that lime does not, in its own composition, contain any fertilizing principle, but is useful only by its operation upon substances really fertilizing, which it meets with in the soil, and which, without its operation, would remain in a dormant state; for, though it is perfectly certain, that lime has the power of attracting much, both from the earth and the atmosphere, it does not follow, that any of its own component parts, or, indeed, any thing it attracts or collects by its powers, will, of themselves, be food for plants. It is the effect produced upon these by lime, that renders them useful; and, from their decomposition, and the new combinations formed, the benefit results. Without such combination, they would remain dormant; and the lime, in place of being useful, would prove injurious.

Taking this for granted, it is incumbent upon every person using lime, to ascertain, with strict precision, the purpose he intends it to answer; whether, as upon strong wet clay, it is applied with a view to break the cohesion of the soil, and open it in such a manner as to allow the roots of the plants to take as wide a range as possible, in search of food, and, at the same time, sweeten and correct the acidity so prevalent in such soils. In those cases, a good dressing should be given at once, and such as to prevent the necessity of a repetition for many years.

Upon strong, deep, moist, loamy soils, where it is intended to put in action the latent principles they contain, most of which are found to consist of animal and undecayed vegetable substances, lime produces the most surprising effects, provided a judicious rotation of alternate white and green crops is followed. Such soils, after the application of lime, will produce bulky and valuable crops with a much smaller proportion of dung, than if no lime had been applied, owing evidently to the active powers of the lime pervading the dung, and rendering every particle of it useful.

Upon

Upon poor, weak, weeping clays, where, owing to the quantity of acid and ferruginous particles, the dung is locked up, and prevented from exerting itself, the application of lime is equally salutary, by separating the acid from the iron, putting the vegetable matters into a state of activity, and opening the soil, in such a manner as to afford free scope for the roots to extend and stretch themselves out in every direction. Such lands, if they are dunged and laid into grass, immediately after the lime is applied, will have their value greatly increased, especially if due pains are taken to crop moderately, when they are afterwards broke up. In every instance, hard cropping after lime is hurtful; but, upon soils of this description, it is ruinous.

Upon deep, dry, loamy soils, where the principles of fertility are abundant, and which contain, within themselves, that happy mixture of stimulating and enriching materials, lime appears less necessary than upon almost any other soil. Such lands, if kept clean, and a proper rotation followed, will produce excellent crops, by the application of dung only. Lime, however, in small quantities, will be useful after every second dunging, and will effectually operate upon, and bring into activity, such parts of the manure as would otherwise have remained in a dormant state; for, whether it is owing to an imperfect fermentation, or to whatever cause, it is certain that a considerable proportion of all the dung applied to land remains in an inactive state, owing evidently to the want of alkaline, or calcareous matter, to operate upon it.

Upon light sandy soils, which are seldom known to abound very much with vegetable matter, lime is useful, in a double sense: First, by acting upon the decayed vegetables it meets with; and, next, by the decomposition of shells, decayed gravel, &c.; which, by moulding down into earth, thicken the staple of the land, and form a soil much less liable to be hurt by drought, or indeed any accident by which crops are generally injured. Having little moisture in itself, the lime readily attracts it from the atmosphere; which accounts for its resisting dry weather.

Upon soft, black, moorish soils, which certainly are the most worthless of any with which we are acquainted, the application of lime, and the after treatment, requires the greatest care. In no instance ought the dressing to be heavy: as the materials upon which it is to operate are scanty, perhaps 30 bolls *per* acre is as much as should be ventured upon at

at first; and, if there is an opportunity of bestowing top dressings, of good earth, or compost, afterwards, and the land allowed to remain in grass for a series of years, a greater proportion of lime may be afterwards applied, with advantage; as a considerable quantity of vegetable matter will, by that time, be accumulated, upon which it will exert itself. But, in this, as well as the first stage of liming such soils, the cropping should be carefully managed, and the land returned to grass as soon as possible.

To point out the effects of lime, and the quantity required, upon every gradation of soil, would greatly exceed the limits of a paper such as this; but, if the hints now offered meet with your approbation, and are deemed worthy of a place in your Magazine, I will send you the remainder of my observations, for insertion in your next Number. Meantime, I am, very respectfully, Gentlemen, yours,

P.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Use of Lime, and the Management of Dung.

GENTLEMEN,

IN your Magazine, No. 6. your correspondent, who calls himself a Novice, desires to know the experiments on the best methods of applying lime. By your note to him, you consider him as taking an affected signature; but your reason for this conclusion is not so obvious, from any thing that either party has advanced. I also am a novice, and desirous of your answer.

The Novice's second query, I am sure, in appearance, disguises no superior skill; when he says, he is at a loss how lime, if it be perfectly effete before sowing turnips, can conduce to the benefit of the crop, or even of the ground. I presume *effete* lime, means, lime that has reabsorbed its fixed air that was expelled by burning; that is, effete lime, is simply lime that is not quick lime. Considerable doubts have arisen amongst farmers, whether lime should be applied, in general, *hot or effete*, and which is most beneficial to the crop and ground; of which the Novice does not seem aware: And, as I am inclined to think, that all lime spread on the

the ground, becomes almost instantly effete, I shall be glad to hear your opinion on this question.

As to the Novice's other questions, whether it is serviceable to mix up stable dung with earth? and, whether it should be much rotted when laid on the lands? I humbly presume to refer him to an essay on that subject by Dr Fenwick of Durham. His concluding words are—'If we can bring the airs which arise from our dunghills into close contact with soil, we may reasonably suppose, that no inconsiderable portion of them will be retained by it. For this purpose, let a portion of surface soil, or any light earth, be strewed, as soon as may be, on the dunghill; if the quantity thrown on be not too large, it will not check the putrefaction. After a time, let this soil be mixed with the dung; or, if the fermentation should not be active, let it be thrown off, and heaped up beside it, and then another portion laid on the dung at first: Thus, by degrees, we shall form the most valuable materials for composts; and profit by those active principles, which are, in the present practice, inconsiderately wasted. Peat earth will answer better than any other, for this purpose, both as the lightest, and as it abounds in vegetable matter; which, under this treatment, will be converted into a valuable manure.'

He adds—'It is worth inquiring, how far it is necessary for dung to be in so advanced a stage of putrefaction before we use it. I have already observed, that, if it be ploughed into land before its fermentation is somewhat advanced, the process will be stopped; but, when it has once pervaded the mass completely, we may mingle it with the soil, without any such effect: and I have the authority of one of our most intelligent and experienced farmers, for asserting, that half rotted litter is best.'

I have only to add, that light earth is also very valuable, to be mixed with dung, for the purpose of absorbing the moisture of the dunghill, that otherwise might be lost.

NOVICE JUNIOR.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Observations on the Cultivation of Potatoes.

GENTLEMEN,

HAVING long entertained an idea, that the formation of apples upon potatoes was detrimental to the crop, by drawing away a large and valuable part of the nourishment from the roots; I, this year, made an experiment, which, I think, goes a great way to solve the question. Having planted some acres of different kinds, I had the flowers carefully picked from several of the drills, as soon as they appeared; leaving between every drill, so picked, a drill with the flowers untouched. In some cases, I allowed the flowers to expand, and even to make some progress towards setting; in others, I suffered the apples to form, and pulled them off when they were half grown. The following is the result.

In the drills, where the flowers were gathered as soon as they appeared, the crop was, in most instances, nearly double what it was where the apples were allowed to come to maturity. Where the flowers were allowed to waste themselves, the crop was less abundant; and where the apples had made some progress, it was still less, though greatly better than where they had been left untouched. In short, from the time of the flowers appearing, and as long as the leaves continued green, and the stems growing, there appeared an advantage, from gathering both the flowers and apples; gradually diminishing, however, as they approached the ultimate period of their growth. I remarked also, that the stems of the potatoes, in the drills where the flowers had been picked off, continued green and vigorous, much longer than where they were suffered to grow; and also, where the apples were gathered at an early period. I, at the same time, made trials as to the effects of cutting the haum, or shaw, as it is commonly called in Scotland, at different stages of its growth; all of which I found ruinous; the deficiency of the crop being in exact proportion to the earliness of the cutting; with this addition, that the potatoes were ill ripened, and of a very bad quality; while those adjoining, where the haum had been left, were excellent. I also made a careful trial as to the advantage of drawing up the earth to the stems; which I find greatly superior to the practice followed

followed by some, of only clearing away the weeds, without giving them any earth at all. In this last case, I found the crop not only less abundant, but a great part of the potatoes, by being so near the surface, were without a covering, and, by being exposed to the depredations of vermin and the weather, quite spoiled. From trials, I also found, that no benefit arises from very early planting, especially of the late kinds; as, however early they may be put into the ground, they do not vegetate till a certain period; and, in the mean time, are exposed to every injury arising from frosty or wet weather, which frequently happens in the Spring. I this year planted some of the late kinds in the beginning of July; and, a few days since, raised a crop from them, no way inferior to that obtained from those planted in February. While I mention this circumstance, I think it of consequence to state, that all the different kinds, both of early and late potatoes, may be rendered at least a month earlier, by a very simple process, namely, that of putting them in a warm place early in the Spring, allowing the shoots to grow an inch or two, and afterwards planting them out, leaving the top of the shoot nearly upon the surface. By this management, I have frequently had a good crop of potatoes, a month or five weeks earlier than I could have otherwise obtained it from the same kinds, without such attention.

In conclusion, I beg leave to mention a circumstance, which I consider of much importance to those who wish to raise new kinds from the apple. In the ordinary way, it is three years before potatoes can be obtained of any tolerable size; a fourth year is required to ascertain their properties. A trial which I have made, convinces me, that new kinds may be obtained from the apple much sooner, and every property they possess completely ascertained the first year. It consists in gathering the apples early in the season, hanging them in a dry place till New Year, and then rubbing them to pieces with fine dry sand, after which they may be sown in a hot-bed, or in a box placed upon warm dung. As soon as they have put out the rough leaf, they should be transplanted in drills, richly dunged, and put pretty deep into the earth, leaving only the top uncovered. Where this is done at an early period of the season, the crop will be considerable; and every property, possessed by the different kinds, ascertained the first year. I am, Gentlemen, yours, &c.

A. Z.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Mr Elkington's Method of Draining.

GENTLEMEN,

THE benefit arising from drainmg, whether by carrying away surface water, or freeing the land from spouts, occasioned by water bursting out from higher grounds, is so great, as to require no encomium of mine. The purpose of the present communication is, simply to mention, that a Mr Johnstone, a countryman of our own, was a considerable time in England with the celebrated Mr Elkington, by whom he was instructed in the mode of draining, which obtained the sanction of the Board of Agriculture, and both Houses of Parliament, and for which Mr Elkington received a public remuneration. Mr Johnstone has published a very intelligent work upon the subject, well worth the attention of proprietors and farmers, especially in upland situations, where the land, from its great inclination, is incumbered with spouts, to which Mr Elkington's mode of draining is peculiarly adapted. As Mr Johnstone possesses very considerable merit, and no small degree of knowledge in other branches of rural science, and as the work above mentioned is of high importance to agriculture, I hope you will have the goodness to give this a place in your Magazine. While I make this request, I can at the same time assure you, that I have no other interest in its success, than what arises from a wish to make a work, of such obvious utility, as extensively known as possible. Mr Johnstone will be heard of, by applying to Mr Constable, or any of the principal booksellers in Edinburgh.

I am, Gentlemen,

A Friend to Merit.

Note.

The Conductors, having perused the work now mentioned, have much pleasure in being able to add their approbation to that of the writer of this letter, and in recommending it to the attention of all proprietors and farmers.

TO

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Proposal of a Canal in the Stewartry of Kirkcudbright.

GENTLEMEN,

THE following observations on a Navigable Canal in the stewartry of Kirkcudbright, are taken from a paper given in to the Glenkens, or New Galloway, Farming Society. Should they appear consistent with the plan of your Publication, you may insert them; as they will, in this way, not only reach the persons most interested, but obtain that consideration from the public, which an object of that importance requires.

N. G. 1st June 1801. A. M.

'A Canal, from a lake at Carlinwark, beside Castle-Douglas, to a lake upon Kenn, was many years ago made, at the expence of Sir Alexander Gordon of Culvennan, the lake at Carlinwark containing an almost inexhaustible quantity of marl. Through this channel, marl was sometimes brought as far as New-Galloway. In the present improved state of the roads, English lime is brought, in carts, into the Glenkens district of the stewartry, from Tungland, at the head of the Bay of Kirkcudbright, about nineteen miles below New Galloway; or from Barjarg, in Dumfriesshire; or Keirs, or Lanehead, in Airshire; at nearly equal distances. It was in speculation, about fourteen years ago, to have enlarged the above Canal, from the Lake upon Kenn to Carlinwark, and to have continued it thence to the sea, at the Bay of Heston, near Orchardton, in the parish of Rerrick, about six miles; the country, on this line, being very level, except one small rise: as it would yield a very great return, from bringing lime and coals by water carriage to the head of the Lake upon Kenn, and give a more ready and cheap vent to the bulky articles of the produce of the country. The expence was estimated at little more than 10,000l.; but, although it is believed it would pay upwards of 25 *per cent.* yearly, subscribers could not be found to run the hazard.

Since the year 1780, a great deal has been done to the highways in this district; a sum of 3000l., and upwards, having been expended, in consequence of an act of Parliament

passed in that year, for the conversion of the statute labour into money; and, by another act, passed in 1796, the trustees were entitled to increase the assessment to a certain extent, and erect turnpikes. The Canal would therefore be attended with advantages, of carriage to and from it, exceedingly beyond what it had when first proposed.

Among other articles which might be brought into the district, at a cheaper rate, beside lime and coal, (of which the stewartry does not produce any), are, tar, iron, groceries, and merchant goods of all sorts, furniture, foreign wood, and slates for houses and sheds for cattle, (thatching with straw being an incalculable waste of food and litter). Among those which might be carried out of it, are, betwixt seven and eight hundred packs of wool, from four parishes, and a good deal from others; a quantity of oak, ash, elm, plane-tree, &c. from the woods here, at present of little value, except the oak, on account of the bark; the surplus of the grain also, raised by the lime brought in, would find vent; and even potatoes, of little use in ordinary seasons, except for home consumption.

To give some idea of the advantage that would arise from the Canal, take the profit on the land, considered singly.—Thus, if 6 miles in breadth, and 14 in length, or 42,000 Scots acres, on the sides of the Canal, were benefited only 2s. 6d. *per* acre, for tillage or pasturage, the yearly profit from thence would be 5250l.; which, allowing the expence of the Canal to be 15,000l., would be repaying it in less than three years; and this is confining the advantages to one article, and to three miles distance on each side of the Canal; whereas, they would extend to five times that distance, in a lesser degree.

This is an improvement only in the power of the wealthy proprietors in the district; but there are so many of these, and so opulent, it is matter of surprize it has not been already made. A. M.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Hints of Management, tending to Obviate the Effects of Severe Drought.

GENTLEMEN,

As the effects of severe drought are chiefly felt upon soft light soils, I beg leave, through the channel of your Maga-

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zine, to communicate a hint, which, if properly attended to, may be useful to those possessing or occupying property in such situations. Early in the season, I was struck with the benefit that attended the earthing up of some plants of wheat and oats in my garden, which continued growing vigorously during the whole of the dry weather. I made the same observation, in a very light, dry part of a field which I had rolled, to consolidate the soil, and enable it to resist the drought, in different parts of which, where the roller had turned, and, by heaping up the soil, almost buried a part of the plants, they afterwards sprung up, and put out stems as strong as reeds, with a great number of offsets, and a large ear; while those, immediately adjoining, were very small and stinted. Improving upon the hint, I (with my foot) hoed a few yards square, into drills about ten inches separate, drew up the earth to the roots of the plants, and pressed it well down. The result was very satisfactory. The plants throve from the day they were earthed up, grew very strong, and, though hoed inro drills ten inches apart, yielded more than three times the produce of the rest of that part of the field. I have long imagined, that our broad-cast crops either failed, or were less productive, owing to their not having a sufficient establishment in the soil, especially upon light dry lands, of which I think the above is a tolerable proof. Would not the ploughing in of the seed be attended with benefit upon such soils? And would it not equally prevent the mischief arising from Spring frosts, and dry Summers, especially with wheat and barley crops? I am, Gentlemen, yours,

A. Z.

FOR THE FARMER'S MAGAZINE.

Sketch of a Tour through the Northern Counties of Scotland, by a Farmer.

PART IV.

(Continued from page 294.)

INVERNESS is a place of considerable importance, enjoying many local advantages, and occupied by people who are active and industrious. It is situated upon the river *Ness*, over which a stone bridge was erected in 1688, affording

communication with the Western and Northern districts. Several manufactures are carried on here, particularly one for weaving hempen stuffs. The first charter of the town was granted by Malcolm Canmore, in the eleventh century; which was confirmed and enlarged by future monarchs; the inhabitants always remaining steady in their attachment to the Crown, in opposition to the unbridled licentiousness which anciently prevailed among the neighbouring chieftains.

The soil, in the immediate vicinity of the town, is naturally of a good quality, and artificially enriched by the great quantity of manure, gathered, for ages, in such a populous place. Land-rent is very high, we mean, within two or three miles of the place; nor is this to be wondered at, as the value of the produce is not much below the rates of the metropolis. We saw excellent turnips; fine fields of clover and rye-grass; and, in short, except in the article of wheat, which is not extensively sown, the several crops appeared rather superior to any we had seen, northward of the Forth, excepting those in the Carse of Gowrie and Banffshire.

After seeing every thing worthy of observation at Inverness, we proceeded up the *Aird*, through Lovat's country, which afforded us a most delightful excursion. The land upon Beaulieu Frith is of a rich quality, much of it a heavy loam, (a rare variety in the North of Scotland), and the management considerably above mediocrity. We heard of one gentleman, who had raised an extraordinary crop of wheat some years ago; but as the quantity *per* acre is not noted in our journal, we forbear quoting the bolls from memory, though we believe it was equal to the crop cultivated by Mr Yelverton, for which a premium was obtained from the Dublin Society. We formed a high opinion of the Aird; and if the climate be not backward, it is in other respects calculated for producing every kind of crop, whether culmiferous or leguminous.

Returned to the neighbourhood of Inverness, in company with a gentleman, who favoured us with many instances of attention and civility, and afterwards accompanied us through part of Ross-shire. At his house we met with the poet-laureat of the Inverness volunteers, who styled himself the *Claughmecleughan Bard*, and were favoured with various specimens of his poetical talents, which afforded us much entertainment.

Crossed

Crossed the Frith at *Kessock Ferry*, but experienced a disagreeable passage. Once for all, it may be remarked, that, having so many ferries to pass, is not the most agreeable circumstance attending a Northern tour; for the boats are bad, being chiefly old craft, while the ferries are not under the best regulations, some of them under none at all. The high hills adjoining, often occasion sudden gusts of wind, which render passages very dangerous; however, we got over safe, though, from the smallness of the boat, we could not cross all at once; consequently, were detained a considerable time on the opposite shore.

The first thing we noticed, upon landing at Kessock, was barley in the stook, though the season was no farther advanced than the first week of August, which was a sure proof of the dryness of the soil, and earliness of the climate. Proceeded to Allangrange, the seat of Mr M'K—, to whom we were recommended; but, unluckily, that gentleman was from home, which we considered as an unfortunate circumstance. The land from Kessock to Allangrange, is mostly in its natural state; but seems capable of receiving considerable improvement. At Allangrange, we found the fields carrying crops equal to those got in the best cultivated counties. The Summer fallow was well wrought; turnips were excellent, and nicely handled; and, in short, every operation executed in a most husbandmanlike style. Two young gentlemen, friends of Mr M'K—'s, kindly shewed us the whole of his farm; and, if the absence of that gentleman could have been compensated, the politeness displayed by them and Mrs M'K—, would certainly have made it up.

To *Dingwall*, 9 miles. Much of the land, through which we passed, is of moorish quality; but, upon the Conan Water, the soil is good, particularly as we approached the burgh of Dingwall. Up Strath Peffer, the soil is mostly clay, and heavy loam upon a moist bottom. Barley and oats are the grains chiefly sown; though we saw some excellent pease, a grain not frequently sown in the Northern districts. Indeed, the ground appeared capable of carrying every kind of corn crop, if a suitable arrangement was made, which, at present, is not the case. Some South-country farmers have lately settled in the neighbourhood, who, it is to be hoped, will produce the wished for change.

Dingwall is a small Royal burgh, situated at the head of the Cromarty Frith, and nearly in the centre of Ross-shire; though Tain, which is in East Ross, is the county town, where

where public business is transacted. This place is of great antiquity, its original charter being granted by Alexander II. in the thirteenth century; and here the potent Earls of Ross, who lorded over all the adjoining country in ancient times, had their principal residence. A small retail trade to the inland parts, constitutes almost the whole business of the place, unless it be what is carried on by the gentlemen of the law, who are very numerous, in proportion to the total extent of the population.

To *Invergordon Ness*, 14 miles. This was a very delightful stage, though little occurred to gratify the sight of an agriculturist. The greatest part of the corn crops were of poor quality, and suffering dreadfully, in consequence of the severe drought. Potatoes seemed to be planted to a considerable extent, but few fields were good; and as for turnips, they are rarely cultivated in this part of Ross-shire. In crossing Sir Hugh Munro of Foulis' estate, we observed a greater number of small farms, than had hitherto been discernible in our progress. What might be the extent of the several possessions, would be difficult, from a cursory observation, to describe; but, to us, each man appeared to possess about four or five acres of what would be styled infield land, with a quantity of waste land backwards, still more difficult to ascertain. The infield, or town-land, so far as the imperfect condition of the ground admitted its quality to be estimated, looked to be good, though the crops, produced upon it, were of a very inferior cast. Indeed, we should suspect such farmers to be infinitely worse accommodated and provided, than the lowest working servants in the Southern districts of Scotland. Their circumstances, in other respects, are much more uncomfortable; for, in the true feudal spirit, they are dependent upon their chieftain; and must think and act agreeable to the principles maintained by him, or by those appointed to manage the property in his absence. We do not throw out these remarks, as particularly applicable to the estate in question; for the family of Munro have always maintained a distinguished rank in the list of benevolent landlords in the North. The fact is, these observations are applicable to this class of tenantry every where. To give a man only four or five acres of land, you hardly furnish him with the necessaries of life, even allowing he sat rent free; and when it is considered, that such a limited possession deprives him of an opportunity of working regularly, an occa-

sion

sion of idleness is introduced, which, in course of time, becomes a regular habit.

Many Highland proprietors excuse themselves from making an innovation upon the ancient system, by pleading their aversion to remove their present tenants; which necessarily would be the case, were farms of a different size to become customary. Though this, abstractedly considered, is a most laudable principle, and deserves commendation; yet, we suspect, it operates very feebly in every transaction between landlord and tenant. None of the proprietors have any hesitation in raising a company, or recruiting a regiment upon their estates; and the means taken in such cases, need not be enumerated. Under these circumstances, the best men on the estate are taken; the old and the feeble are left to cultivate the land; while the young, and the active, are transported to foreign lands, seldom to return; or, if they do return, it is in a maimed and enfeebled state. We view an estate, parcelled out in the manner which prevails in many Highland districts, as a kind of breeding seminary for recruits, where the landlord loses the full value of his property in the first instance, and consoles himself with the hope, that his loss will be compensated, afterwards, by rank and half-pay to himself and principal dependents.

There are some good inclosures about the house of Foulis; likewise much valuable woodland. At Novar, the seat of Sir Hector Munro, K. B., a variety of extensive improvements have been recently executed; upon which, large sums have been expended, much to the ornament of the country, and the credit of that distinguished officer. To Invergordon Ness, the soil is of a soft sandy nature, in bad order, and the crops were wretchedly poor.

Invergordon Ness, is a tolerably thriving place. Here, after being detained for six hours, we embarked in a crazy boat, and crossed the Cromarty Frith, though it required two trips, as usual, to ferry us over. A farm, belonging to a Mr Middleton, originally from Northumberland, struck our attention, as being cultivated in a superior style to what is customary in this part of the world. Saw a field of excellent wheat, and many other instances of good husbandry; but the country, in general, till we arrived in the neighbourhood of Fortrose, is barren and uncultivated, though very susceptible, in many places, of receiving beneficial improvement, provided any exertions were made by the poſſeſſors.

Fortrose

Fortrose is a Royal burgh, of little consequence, though very pleasantly situated upon the northern shore of the Moray Frith. The soil here is good, but the breadth of arable land much contracted. An old venerable Cathedral still remains here, in defiance of the waste of time, and the rude hand of reformers. Probably, this place was formerly the residence of the Bishop of Ross; but, upon this point, we had no leisure to make inquiry.

As the counties of Ross and Cromarty are much connected together, and under the administration of one Magistrate, we shall here offer a few remarks upon the rural affairs of both. Ross contains a good many acres of fertile land, particularly in the eastern district, which we did not visit; but an acquaintance in the country gave us full information, concerning the soil, climate, and other circumstances. The main impediment to improved husbandry, is, a deficiency of capital stock among the tenantry; without which requisite, agriculture cannot flourish here, or elsewhere. The ancient class of tenants are poor in their circumstances, imperfect in their management, badly provided with farm-houses and offices, possessed of defective implements, and labouring with small cattle and poneys, often both yoked in the same plough. To expect improvement from such people, would be unreasonable in the extreme; for, the most that they generally can perform, is to raise crops sufficient for preserving their existence, and paying the small quota of rent claimed by their landlord. We here speak of the small tenantry; for several respectable men are scattered up and down the two counties, who practise husbandry in all its branches, in a creditable manner. From them, however, it is impossible that the other class can derive much benefit, seeing, that if they were never so willing to imitate their management, existing circumstances render the imitation impracticable.

A large moor, or common, is situated in the heart of the peninsula of Cromarty, which runs nearly from the town of that name to the western extremity, near Beaulieu. Several attempts have been made to divide this extensive commonty, which, from the complicated nature of the claims upon it, have hitherto proved unsuccessful. The right of the burgh of Fortrose, augments the natural difficulties of the division; and we judge, that a particular act of Parliament is necessary, before it can be legally accomplished. If the

the burgh has a servitude, the general act of 1695 is inapplicable to the business.

It gave us surprise to learn, that the respectable Baronet, who drew up the survey of these counties, estimated their annual agricultural produce only at about 120,000l. Sterling; but our surprise ceased, when we were told of the *data* he assumed in forming his calculations. He first ascertained the *valued* rent, which was an easy matter; and, upon the supposition, that the *real* rent was four times greater, and that the tenant was entitled to four rents, for himself, landlord, and expences, the result was given accordingly. Notwithstanding, that four rents exceed the value of produce, in general cases; it is evident, that such *data* cannot be admitted, when the produce of bad land is to be reckoned. If the average rent of the northern counties be only 3d. *per* acre, as stated in the above mentioned report, it would require the amount of thirty rents to plough a single acre; while the tenant, before he could enjoy an income of 25l. *per annum*, must possess two thousand acres of ground; which would be a poor return to a man who managed such an extensive undertaking.

The sheep husbandry has been lately successfully introduced into Ross-shire; and in our opinion, the hilly parts cannot be managed in a more profitable manner. Much opposition prevailed, in the first instance, to this measure; but we believe, the popular clamour is now, in a great measure, removed. The chief magistrate of the county had great merit in this business; and we were told, that few gentlemen in the kingdom are better informed, concerning this new system of Highland husbandry, than the respectable personage alluded to.

Crossed the Moray Frith in one of the worst boats we ever entered, and after an agreeable passage, landed safely below Fort-George. This is a regular fortification, and was built after the rebellion 1745. The consequences to the adjacent country are highly beneficial, as a ready market is provided for produce of every kind, which is the strongest encouragement to practical agriculture. The soil here, as in most places adjacent to the Moray Frith, is flat and sandy, but the greatest part of it is arable; and more than one half of the parish of Ardersier, in the bounds of which Fort-George is situated, is under cultivation.

To *Nairn*, 9 miles. The soil continues of a light sandy description, and barley and oats are the only grains raised.

The

The Norfolk system of husbandry might here be successfully practised; but a very material change would be necessary, before such a system could be profitably introduced.

We are sorry to learn, that a remark in the third part of this Tour, p. 292, has given offence to some gentlemen at Nairn, which was a circumstance foreign to our intentions. The distresses of the lower orders, over all Scotland, in 1800, especially in towns, were certainly very great; and, notwithstanding every effort used in their behalf, the necessary supplies were with difficulty procured, for supporting them, under such an extraordinary calamity. At Nairn, the appearance of the lower classes was such, as to make us believe, that the general distress was more severely felt there than in other places; and we said so. It affords us much pleasure, however, to learn, that we were mistaken; and that 'no one town in the island experienced less the extremes of 'want, or was more regularly supplied with grain and meal, 'than Nairn.'

To *Dulsie-Bridge*, 11 miles. Adjacent to Nairn, the ground is of tolerable quality; but, as we advanced southward, it became little better than a heathy moor, intersected here and there with some patches of corn land. We observed a few sheep in the course of this stage. The road was very rough and unequal; worse, in every respect, than any we had passed since leaving Aberdeenshire.

To *Aviemore*, 20 miles. This place is situated in that delightful Highland district, called Strathspey, where, according to appearance, the people are more comfortably provided than in any other parts of the Highlands we visited. After leaving Dulsie-bridge, the country may be ranked as a barren moor, capable of carrying nothing but heath and wood. We saw some excellent timber upon Miss Brodie's estate, which would almost incline us to change our opinion respecting the value of the adjacent country; but, at any rate, this only applies to the low grounds; for, upon the hills, no branch of husbandry, but that of sheep, can be profitably carried on. As we entered Strathspey, the face of things wore a brighter aspect, and many decent fields of barley, oats, and oats and rye mixed, were discernible.

To *Pitmain*, 14 miles. Up Strathspey, the scene is truly agreeable. The river runs in the middle of the low ground, and fields of corn and meadow land are spread upon its banks. At Alvie-bridge, we left Stathspey; and here, we believe, the district of Badenoch commences. This district chiefly belongs to the Duke of Gordon, whose estate reaches nearly

nearly to Fort-William, and contains a number of fine fir woods, of great value. An elegant house, which we were told belonged to a Mr M'Pherson, presents itself in this stage; and, certainly, in a country like this, where elegant buildings are very rare, such a house cannot fail to excite the wonder and admiration of the neighbourhood. We were informed, that in Badenoch, the Duke of Gordon gives leases of no longer duration than three years, and that many of his tenants have none at all; which is certainly against his own interest, and the comfort of his numerous tenantry.

To *Dalwhinnie*, 13 miles. Some corn fields on the side of Spey; the high ground well calculated for sheep pasture. As we approached Dalwhinnie, the land became inferior, though the landlord of the inn had a barley or bigg field, of superior quality to any we had lately viewed; likewise a tolerably good garden, which must be a forced business, at such a height above the level of the sea. The climate must necessarily be as backward here, as in any part of the island; for, upon the north side of several hills, snow was lying upon the 8th day of August.

To *Dalnacardoch*, 13 miles. About five miles northward of this place, we quitted the county of Inverness, and entered Perthshire; but, as yet, little improvement has taken place upon the face of the country. The ground, this stage, was barren and uncultivated; few houses were to be seen; and the only comfortable circumstance we experienced, was a good road, originally made at the expence of Government, and still upheld out of the annual grants bestowed by Parliament for supporting military roads in the Highlands.

To *Blair-in-Athol*, 10 miles. We now entered a better country, or, as Dr Johnson would have called it, a country of *Saddles and Bridles*, which gradually improved till we arrived at Blair, the residence of the Duke of Athol. The severity of the drought had injured the corn crops materially; but the fine grass fields about the house afford a sriking contrast to those dreary scenes we had lately explored. The policy, gardens, &c. about Blair, are laid out in a very perfect style, and we enjoyed the most exquisite pleasure in viewing them; but, as his Grace and family resided there at the time, we could not see the house, which, externally, appears to be an ancient building.

We proceeded down the vale of Athol to Dunkeld, which is, perhaps, the most agreeable ride in the island. Great art, in many cases, has been used to increase the natural beauties of the country; and the traveller contemplates, with

delight,

delight, the various picturesque scenes which constantly occur to his observation. We examined Killicrankie-Pass, famous in song, and famous in history for the victory gained in 1689 by Lord Dundee over King William's army, under General Mackay, which is admirably calculated either for attack or defence. The vale here is very narrow, for at least a mile; and, at one part, the hills almost touch the river, the banks of which are very steep on both sides. Mackay had, that morning, marched from Dunkeld to the relief of Blair, and entered the pass in a long narrow line, the situation rendering it impossible to form his men in any other manner. Lord Dundee lay quiet upon the side of the hill, till the Royal army was advanced to the narrow pass, when, suddenly darting down, like a hawk upon his prey, he attacked in flank, overturned the whole line, and gained a complete victory.

Arrived at *Dunkeld*, which still exceeds Blair in rural beauties. It has been a happy circumstance for this part of Scotland, that the Dukes of Athol, for near a century past, have neither been politicians nor gamblers, but chiefly devoted their attention to the management and improvement of those extensive and valuable domains, held by them here, and in other parts of the empire. Such a conduct is meritorious and praiseworthy; and, while it excites the respect of mankind, and eminently promotes the public good, cannot fail to prove a source of comfort to themselves, whence the purest happiness may be enjoyed.

Dunkeld is an ancient city, and was formerly a bishop's see. The cathedral is now used as the parish church. Some manufactures are carried on here, and a good deal of yarn spun in the adjoining country. Being in the mouth of the Highlands, a considerable share of trade is enjoyed by the inhabitants. These things, however, to a stranger, are but trifling objects, when compared with the rural beauties of the place, which are the admiration of every traveller. The Duke's house is a small, but elegant building, and contains a great number of family pictures. The pleasure ground around the house, is of great extent, and, as we were informed by the person who shewed us the policy, contains no fewer than twenty-five miles of walks, all kept in excellent order. Some remarkably large larch trees, planted about fifty years ago, are here to be seen; and wood of all kinds thrives as well as in any part of Great Britain. From the top

top of a high hill, in the middle of the policy, which we ascended by a circular walk, a fine view was procured of the adjacent country.

Crossed the Tay in a kind of flat-bottomed boat, and proceeded for *Ameltree*. Up the water of *Bran*, the country is remarkably populous; but the soil far from being good, and kept under bad management. Farms are of a small size, and much of the ground in a waste state. Very little woodland in this stage, and the roads are in miserable condition.

From Ameltree to *Crief*, 11 miles. This is the roughest and most unequal stage we have travelled, and may well be styled the "*Devil's Causeway.*" The ground is of a poor quality, till we came near the village of Crief, where several decent fields appeared. Crief is a thriving place, and the neighbouring country seems tolerably well cultivated.

To *Ardoch*, 11 miles. After passing the late Lord Perth's improvements, which seem to have been executed in a judicious manner, the country fell off, and cultivated fields were only here and there discernible. The soil appeared chiefly incumbent upon a wet bottom, which, of all others, is worst to manage; and grass constituted a principal object with the possessors. All this tract stands greatly in need of drainage, which, after all, is not much attended to.

To *Stirling*, 11 miles. Very little alteration upon the face of the country, till we came near Dumblane, where the soil is not only of excellent quality, but cultivated in the most judicious style. We here saw a turnip field, part drilled, and the remainder broad-cast. This root had not been in our view for a long time. The crops from Dumblane to Stirling were generally good, and such as land of superior quality ought always to carry.

From Stirling, down the Carse of Falkirk, there is an excellent tract of land, though perhaps the greatest part requires very dexterous management. The farms are mostly small; but the whole country is cultivated. We should suppose that carse land, especially where so much wheat is sown, would require a greater portion of Summer fallow than was here discernible; but the several crops may be stated as excellent of their kinds, and superior to what we viewed in the Carse of Gowrie, which is naturally placed under similar circumstances. We do not think that the land from Stirling to Grangemouth is cropped in such a regular way as that of the Carse of Gowrie, nor that it is so clean; but, as

the crops were as good, if not superior, the inference must be, that the soil is either naturally richer, or that the season was more favourable to the first, than to the last named district.

To Edinburgh, the crop was very scanty, unless in the neighbourhood of Kirkliston, where fine land prevails, and judicious husbandry is practised. Nearer the metropolis, the drought and weeds had lessened the crop. Indeed, in the course of our progress, we uniformly found that the consequences of the unusual dry weather, in Summer 1800, were felt, in direct proportion to the goodness or badness of the husbandry practised.

It is proper, now, to give a few general observations at the conclusion of this Sketch.

The Eastern coast of Scotland appears advancing fast in agricultural science; and, as capital gets into the hands of the tenantry, every modern improvement may be expected to flourish and increase. A spirit of inquiry has, of late, spread rapidly, and in no district more extensively, than in those of Angus, Mearns, and Aberdeen. In those counties, a great deal has been done, though much remains to be accomplished, before husbandry can be viewed as comparatively perfect. We here speak in general terms; for the practice of numerous individuals is as correct and judicious, as is to be found in the most favourite districts.

Further northward, up the southern shores of the Moray Frith, a choice opportunity for introducing improved husbandry, is every where to be found; and the introduction is favoured by the dryness of the soil and earliness of climate; while no local circumstance is adverse or hostile to improvement, either in respect of aration or pasturage. This tract may be viewed as a granary to the manufacturing part of Scotland, and ranked as the Norfolk of this country; the soil and climate having a striking affinity. If proprietors would lend a hand, and give encouragement, we have not a doubt but that the prospect will be realized, and that at an early period.

In the counties of Ross and Cromarty, many detached spots, favourable to improved husbandry, are to be found; but the great proportion of those districts must necessarily be employed in breeding animals. Sheep, in every point of view, claim the preference; for, it is fully ascertained, that a given space of ground will double, triple, nay quadruple the rent, when horned cattle are removed, and sheep substituted

tuted in their place; and this, undoubtedly, elucidates the system of husbandry which ought to be generally practised. We lay it down as a general principle, that cattle cannot be profitably reared, unless green food is provided for them in the Winter months: consequently, in hilly countries, where circumstances prevent aration being carried on with success, sheep is the most profitable animal; while the breeding of cattle ought to be confined to those districts where green crops can be raised for Winter food, and where the state of markets and population do not require a large supply of butcher meat.

N.

FOR THE FARMER'S MAGAZINE.

Abstract of a Speech supposed to have been delivered in a Private Society.

MR PRESES,

NOTWITHSTANDING I consider the remarks, offered by a learned Gentleman, who has taken a share in this debate, upon the agricultural survey of a certain district, as a sure proof that it is not destitute of merit; yet, I am under the necessity of observing, that his strictures are totally unconnected with the question under consideration. The business on hand, is, the *improvement of the waste lands*; and certainly it was copious enough, without introducing extraneous matter. The learned Gentleman, who ought to be as good a judge of forms as any person, has, however, entirely neglected the proper subject, and wantonly attacked a local survey, which, I frankly acknowledge, has not gained much popularity. If the chapter of that survey, devoted to the Melioration of Waste Lands, had only engaged his attention, trifling as the remarks might have been, he still had been in order; but to censure the whole, without assigning a satisfactory reason, and to attack the character of individuals, who, though in the scale of life *rather* below him, yet, certainly, were respectable in their station, and useful members of society, will not, to any unprejudiced person, appear either liberal or candid. Upon any other subject, I would scarcely have thought it necessary to have intruded myself upon the attention of this Society; but what

has passed, renders any apology superfluous. I must therefore either defend myself, or tacitly allow that the censure is just, and my conduct improper.

Without questioning, further, the right which the learned Gentleman had to mention the survey, in the manner he has done, I must be excused for saying, that the censure was at once harsh and unjust, on his part; and on mine, wholly unmerited. I had the honour, in surveying the district in question, to be conjoined with two other farmers of great abilities; and the task of drawing up the report fell to my share; therefore consider myself as particularly responsible for any improprieties which may have occurred in its execution. Under a strong impression of this responsibility, I venture to say, that, notwithstanding his strictures upon the work, the most scrupulous analysis will find it in strict unison with the letter and spirit of our instructions.

Filling the respectable situations which the learned Gentleman has done, I would have expected, that, in conveying censure, or imputing blame, facts would have been stated, sufficient to warrant such censure. When proofs of that kind are brought forward, the public are in general convinced, and the convicted individual, in the place of courting discussion, or attempting his vindication, in the manner I now do, finds his safety in silence and obscurity. But I shun no discussion; on the contrary, I stand forward to repel the unprovoked attack. The law allows a fair trial to persons accused of the worst of crimes; and if a felon can demand such a trial, why should it be denied to me, against whom no charge can be brought, but that of endeavouring to execute, with all the ability in my power, the task assigned me?

I must be allowed to say, that no evidence has been adduced in my case; and that, in place of facts, the learned Gentleman has condemned me upon loose constructive insinuations. Have I given a false account of the present state of agriculture? If I have, let him point out my errors. If the obstacles to improvement, which I have mentioned, have no existence, let me be punished for propagating falsehoods; and if the means suggested for improvement are irrelevant, let their defects be condescended upon. In a word, if the survey does not contain a faithful picture of what the district now is, and also of what it might be, under the system I have laid down, let it be consigned to oblivion; which, after all, would now be a difficult task. To

prove,

prove, however, that it is viewed in a favourable light by men of the first respectability, both in point of rank and talents, I will here use the freedom to read an extract from a letter with which I was favoured by a Noble Lord, intimately acquainted with the husbandry of the district, and who at one period took an active part in the proceedings of the Agricultural Board.

"I was much pleased in reading your valuable Report, amended, of the ....., which I received a few days since, and by which I am much obliged. I made many inquiries for it before its arrival. I have now quite finished reading it; and afterwards, shall frequently resort to it, as much knowledge in agriculture is contained in a small compass."

I have no vanity to gratify, in giving this extract; but have done it merely with a view to prove, that, even among persons of rank, there does not seem to be any fixed standard for opinion, and that, however much the learned Gentleman's authority may have been looked up to upon law affairs, it is at least questionable upon agricultural subjects.

In reprobating the introduction of political economy into an agricultural survey, the learned Gentleman is either ignorant of the plan laid down by the Board; or, if he ever knew it, must have forgot that a whole chapter is devoted to such subjects, independent of several sections included in other chapters. As the learned Gentleman was, till lately, an official member of the Board, it is reasonable to presume, that its proceedings were not unknown to him; if they were, there appears much harshness and injustice in arraigning the conduct of those, who, in strict obedience to orders, had done every thing in their power to promote the public good, and fulfil the intentions of those under whom they acted. One excuse he may offer for his ignorance, namely, the numerous and important avocations of office; and I allow that it is a valid one: but if this should be pled, the public will perhaps be surprised, when they learn, that time was found to attend the meeting for displacing Sir John Sinclair, who was the founder of the Board, and whose name and merits will bear a comparison with those of the learned Gentleman, and will occupy a warm place in the hearts and remembrance of every wise and good man.

The learned Gentleman was pleased to say, that these Scotish farmers had taken upon them to condemn the whole system of agriculture, practised in the district; to complain of tithes, and a variety of other matters of established

usage, of which they were totally ignorant. The first part of the charge, Sir, is expressly denied; and no person would have made it, who had deliberately perused the work, or who was acquainted with practical husbandry. The nature of the connexion betwixt landlord and tenant, is undoubtedly characterized as inimical to improvements; and, upon this point, I believe there are scarcely two opinions among those who have studied the subject. But, Sir, was there any guilt in offering our opinion, (and we did no more) even allowing that it was founded upon erroneous principles? We considered the want of leases as an unsurmountable obstacle to the improvement of the country; and this being our decided sentiment, we would have deserved the severest reproach, and been unworthy of the confidence reposed in us, had we omitted to describe the pernicious consequences attending the want of them, in the most forcible terms.

Upon the subject of tithes, less is said, I confess, than what the importance of the subject required; yet, notwithstanding that a great majority of all the surveyors concur in the opinion, that the drawing of tithe is hostile to improvement, none of them are arraigned, except the Scotish farmers employed by the Board, and who did not say one fourth so much upon the subject as some others. To what principle, or, rather, to what capricious motive, am I to ascribe this selection? Without troubling myself in searching for reasons, I say, that the surveyors neither meant, nor wished that any man, or any class of men, should be deprived of property, which the laws or usage of the country had conferred upon them. They only wished to commute a burthen, which had been long viewed as an impediment to agricultural improvement; and, certainly, commutations are not so rare, in Britain, as to make any wise man start when such a proposal was made. Upon this point, I need not remind the learned Gentleman, of the established practice of the country which gave him birth, the beneficial consequences of which cannot have escaped his notice; nor need I call upon him to recollect, that no length of time can be pled in favour of any usage or custom, which, by an alteration of circumstances, may have become hurtful, or even inconvenient to the public, however universally acquiesced in formerly. That the payment of tithes in kind, has survived the circumstances to which they were originally owing, is generally acknowledged; and as the Legislature is every day employed in repealing obsolete

and

and inconvenient laws, I am not without hope, that the subject of tithes will be found worthy of their attention, and that at a period not very distant.

With regard to our competency to judge of the utility of leases, or the payment of tithes in kind, the learned Gentleman's conclusion must be formed upon the worst *data*, or upon no *data* at all. Had the observation been applied to persons cultivating land in some of the English counties, where tithes are drawn in kind, and no leases are granted, and who had never observed the exertion and enterprise shown by farmers differently situated, there would, at least, be a shadow of reason on his side. With us, the case is different; we have seen both sides of the picture, and were thereby enabled to form a just comparative estimate of the advantages of our own situation, and the loss and disadvantage attending the other. Leases are general with us, and their benefit is indisputable; and though, fortunately, no great tithes are paid by farmers, slender observation was necessary, to convince us of the impolicy of a burthen, which unquestionably operates as a tax upon industry. May I remind the learned Gentleman, that every farm, from which tithe in kind is drawn, loses all its manure every tenth year; and did he think we were so lame in professional knowledge, as not to be able to appreciate the great loss, which every cultivator, so situated, must necessarily sustain?

As to the sources whence our information was drawn, I can, with confidence, assure the learned Gentleman, that the persons, upon whom he has, with much elegance, bestowed the name of *Ale-house Associates*, were of a very superior description. Several of them were *his* equals in *every* respect; and all of them greatly above spending their time in houses of that kind, even if we had been disposed to accompany them. The learned Gentleman's ignorance of our character, can only account for his imputing to us, what no person, who knows us, will believe, and what we very much despise. The only house that we entered, which could be described as an ale-house, was the inn at K.....h, where, over a bottle of humble port, we received from his own steward (a very honest man) a considerable part of the information, which he has so keenly animadverted upon.

But, how is the circumstance of retailing the ideas of ale-house politicians, to be reconciled with another part of the learned Gentleman's speech, wherein he accuses us with forming our sentiments, according to the customs and prac-

tices of our own country; thereby meaning, that we had not judgement to discriminate betwixt the soil, climate, markets, and other local particulars of the district surveyed, and those of North Britain? Now, Sir, in his defence, the alternative may be taken, but he cannot found upon both; for if we retailed the ideas of the ale-house politicians, (the learned Gentleman, I believe, was well acquainted with these gentlemen thirty years ago), we certainly could not be influenced by any partiality for the customs and practices of our own country. It would be cruel to push him farther on this point, though such tergiversation furnishes a strong proof of the weakness of human nature, and how far people, of superior abilities, may go wrong, when they meddle with matters out of their ordinary sphere.

One word more, Sir, and I am done. The expression, *Scotish farmer*, has, of late, been used as a term of reproach; and the learned Gentleman indirectly countenances such unmerited obloquy. Here I might inquire, what degree of influence the River Tweed has in forming the human character? and whether the circumstances of birth and residence, on its Northern banks, are more unfavourable to genius and enterprize, than when they take place farther southward? But, away with such illiberal sentiments! which, however current thirty or forty years ago, are now generally reprobated. I may, however, remark, that husbandry is practised in as perfect a manner in Scotland, as in the best English counties; and, if the rent paid by the occupier is admitted as a criterion, I am warranted in saying, that our practice is superior; for, a given space of ground in Scotland, pays more to the proprietor, than the same extent of land, of equal quality, does in England, every public burthen included. The ability to pay this higher rent, unquestionably proceeds from superior cultivation, as climate and markets are more favourable in the latter, than in the former. Without laying claim to the spirit of prophecy, I venture to predict, that, unless English proprietors grant leases upon proper terms, and the Legislature make arrangements in the tithe and poor-rate systems, and for dividing mixed property, the husbandry of England will rather languish and go back, than keep pace with the improvements in other sciences; and that our dependence upon other countries will increase, not in an arithmetical, but geometrical progression. I am supported in this prediction, by the respectable authority of the writer of the Statistical Account of Scotland, who says,

says, when speaking about the different rates of land-tax paid by England and Scotland, Appendix to the 20th volume, p. 91— "Let the English pass a general bill of inclosure; let them modify tithes, so as to prevent their being a bar to improvement; let them restrain the poor-rates within moderate bounds; let them abolish any obnoxious remnants of the feudal system; let them grant proper leases to their tenants; and let them demand an adequate income from their estates; and the land of England will soon be as cheaply taxed, as that of Scotland. It is owing to the circumstances above alluded to, that the rents of Scotland have proportionably increased more, under all the disadvantages of an inferior soil, of an inferior climate, of an inferior capital, and of inferior markets. Give England the same legal advantages, which Scotland at present happily possesses, and its agricultural prosperity would increase, in such a *ratio*, that the land-tax, it is now subject to, would not be felt."

Finally, Sir, as the learned gentleman has not spared my feelings, in attacking the survey in question, he cannot certainly blame me, if I have fallen short of that politeness with which he is accustomed to be addressed. I speak the language of truth, under the impression of feelings, which, I maintain, the learned gentleman had no right to wound.

N.

PART II.

Review of Agricultural Publications.

A Letter addressed to the Right Honourable Lord Carrington, President of the Board of Agriculture, by Colonel FULLARTON *of Fullarton, M. P. F. R. S. Author of the Agricultural Report for the County of Ayr: London, printed for* J. Debrett, 1801.

THE Message, sent by the Committee of the House of Lords to the Board of Agriculture, relative to the best mode of "*converting grass land to tillage, and restoring the same to grass in an improved state, or at least without injury,*" has put

all

all the agricultural pens in the kingdom in motion; and, notwithstanding that Colonel Fullarton laments the shortness of time allowed for receiving communications, which, he thinks, "will preclude many intelligent and able agriculturists, at a distance, from transmitting their opinions," yet we learn, from indisputable authority, that no fewer than THREE HUNDRED AND THIRTY-FOUR ESSAYS, upon this important question, have been received by the Board. This circumstance decidedly ascertains the interest taken by the public in the increase of tillage land, and the opinion entertained, by professional men, relative to the advantages which may be gained, by changing the rural system, hitherto generally adopted among our Southern neighbours.

The question which forms the text, or ground-work of this letter, is confessedly of as much importance, as any one that can be submitted to the consideration of a practical agriculturist. It involves every principle, connected with the right management of the soil; and, if treated in a proper manner, includes every branch of rural labour. Upon these accounts, such an inquiry may be viewed as a national object; for, if the soil constitutes the capital stock of a country, as maintained by many political economists; and if the exclusive grass system, hitherto adhered to in many English counties, has occasioned a serious loss to the public (a circumstance not now problematical); then every attempt to increase the produce of the soil, and to bring the whole land of the kingdom under a proper system, or course of management, must be regarded, as tending to promote the public welfare in an eminent degree.

We have long considered the knowledge of practical agriculturists as more limited, respecting the best methods of managing grass land, when converted to tillage, than in any other branch of rural science; and it is not difficult to assign causes for this deficiency. It is but a small part of the profession, that enjoy the opportunity of ploughing such lands; and even those, to whose share such a task has fallen, seldom have occasion to repeat the work; consequently, are precluded from bringing into action, the wisdom gained in the course of the first attempt. When we speak of old grass land, we are far from including those fields, to be found in almost every arable farm, which are broke up, after lying a few years in pasture grass.—No; we confine the remark to such lands as may have been deprived of aration, for twenty, fifty, or an hundred years, which is precisely the case of those

those lands, to which these inquiries are directed. The right management of old grass land, when first broke up, is a *desideratum* in agriculture; for though the advantages are manifest, yet no branch of tillage requires more carefulness in executing the different operations. The truth of these observations is exemplified every day, by the many unsuccessful attempts made to cultivate land under such circumstances, especially where the soil is of an heavy or argillaceous nature.

Colonel Fullarton, the author of the pamphlet now before us, is well known to possess considerable abilities. His letters to Lord Macartney, upon the politics of India, gained him great applause; and the survey of Ayrshire displayed much knowledge of what is called country affairs. Prepossessed in his favour, we entered upon his letter to Lord Carrington, with the eager hope of receiving valuable information, concerning the best mode of breaking up grass land; but we are truly sorry to say, that, in the perusal of it, we have been much disappointed.

After paying several compliments to his Lordship and the Board (well or ill-founded we do not presume to inquire), the Colonel takes up the inquiry, according to the plan chalked out in the Board's advertisement. The first section is devoted to Clay Soils, which are too strong or wet for turnips; and this section may, in fact, be considered as the principal part of the Letter; for many things are here treated upon, which were unnecessary to be repeated, when the other varieties of soil were taken up. As the whole Letter is rather of a desultory nature, and far from being well arranged, it is extremely difficult to give a correct analysis of it. We shall, however, endeavour to describe the leading particulars, in such a way, as may enable our readers, who have not seen the pamphlet, to comprehend the sentiments offered to the Board upon this important business.

The first section is introduced with a chymical discussion of the nature and properties of clay soil, wherein the Board are informed, that "clay, in the language of a chymist, is very different from *clayi*, in the language of a farmer." After four pages are thus employed, it is recommended to remove the superfluous moisture, whether proceeding from springs, spouts, or surface water; and the advantages of laying such land dry, are satisfactorily described. Paring and burning the soil, is condemned, as tending to destroy the animal and vegetable substances which may have cost the labour

labour of ages to collect; and it is advised to lay 400 bolls of slacked lime, *per* acre, upon the sward, before ploughing. A moderately deep furrow, from four to six inches, according to the nature of the soil, taking care to shoulder up the furrows against each other, is stated, as the best way of ploughing clay land: and the rotation of crops recommended, is, oats, or wheat, as a first crop; potatoes, beans, and cabbages, to be taken in the second year; these to be succeeded by wheat; and the rotation to finish with barley, accompanied with grass seeds. To the barley crop, it is proposed to give four ploughings, and twenty tons of compost, or manure, *per* acre. Potatoes upon the sward, with manure, are also recommended in another place, as a first crop; and if the rotation shall be confined to three years, beans, wheat, and barley, with grass seeds, are proposed; or oats, beans, and wheat, or barley, as most agreeable to the land owner. These last rotations are only slightly noticed.

Such are the outlines of the management recommended in this letter, upon which we shall offer a few observations.

If there is an axiom in husbandry, the following is one, *to wit*, that, in order to render land fully productive, which has long remained in what may be called its natural state, there is an absolute necessity of ploughing it repeatedly during the Summer months, when the full advantages of aration can only be gained. This is what is commonly called Summer-fallowing; and though the practice is scouted by many modern agriculturists, we are convinced, that their opinions are founded upon mistaken principles, or rather taken up from limited observation. If the soil to be worked, is of a light friable nature, easily pulverized, and parting readily with the grass roots, we can have no difficulty in acknowledging, that a bare Summer fallow may be unnecessary; but upon all strong soils, (and the section of this work, now under consideration, is devoted to "soils too strong and wet for turnips"), we expressly maintain, that the management is imperfect (no matter what the crop is) where Summer fallow is withheld in the second year.

The Colonel's system, however, is of an opposite description. He is for cropping every year, without attending that the multitude of grass roots, and other trumpery, with which such fields are filled, render perfect culture impracticable, before they are eradicated. Neither are such soils calculated for potatoes, turnips, cabbages, and carrots, even after they are completely worked; far less when they can only

only be considered as one degree removed from their natural state: nor will beans thrive in perfection, before the ground is sufficiently cleaned. Besides, under every one of of his rotations, the ground, when returned to grass, would be unfit for the growth of artificial seeds, the aboriginal inhabitants not being extirpated.

We entirely concur with what is said, respecting the necessity of laying grass land dry, before the plough is entered upon it, without which, every other operation would, in a great measure, prove non-effective. We also join the Colonel in thinking, paring and burning unnecessary upon clay soils, though not altogether on account of the reasons he assigns. Why paring and burning should be an objectionable practice, because rape is usually taken as a first crop, we cannot conceive. He says, rape "will feed sheep, but affords no aliment for the human species;" whereas, in our humble opinion, well fed mutton affords as good aliment as can be raised. The object intended by paring and burning, will be better accomplished by a complete Summer fallow in the second year, when a dose of hot lime may be profitably administered.

The quantity of lime specified, as necessary to be applied to rich clay land, we think inadequate for stimulating such a soil. The Colonel speaks of 400 bushels of slacked lime to the acre, which will not exceed 150 bushels, or 25 bolls, Linlithgow barley measure, of good shells from the kiln. Perhaps, double that quantity may be safely administered; at least, we have always found it best to give a strong dose to argillaceous soils.

With regard to the course of crops, oats are undoubtedly the most proper grain to be sown the first year, when old grass land is ploughed; therefore, we were surprised to see wheat recommended in a half and half manner, and the alluring prospect of five or six quarters, *per* acre, held out to the unexperienced farmer. Wheat will do well upon a tender clover lea; but has been rarely attempted upon old grass land, and never without the farmer suffering severely from such an injudicious measure. The impropriety of wheat, as a first crop, is, at last, felt by the Colonel himself, who is obliged to acknowledge, what ought not to have been questioned, that "oats are the staple grain for sowing grass land at first breaking up."

For the reasons already assigned, we object to potatoes, cabbages, carrots and turnips, being taken in the second year;

year; being firmly convinced, that any advantage gained by such articles, would be more than compensated by the deficiency of the subsequent crop, independent of the ground being in a much worse condition. Even drilled beans cannot be raised with advantage, as no land will work, either with horse or hand-hoe, before the turf is destroyed. The reader will please attend, that it is clay soils that are treated of in this section, and that the greatest part of the English pasture lands have not been ploughed for near a century.

With regard to potatoes upon the sward; how, in the name of wonder, is twenty tons of manure, *per* acre, to be procured, unless a robbery is committed upon the old tillage land? Few old pastures, when first broke up, are so poor as to require manure at the outset: indeed, the assistance to be gained from them to the old cultivated fields, has been a main argument with many people in favour of a conversion. We are clear, however, that a calcareous dressing will prove highly useful, both when the land is under corn crops, and when restored to grass. Such a stimulus is necessary for bringing the dormant power of the earth into action, and rousing principles which would otherwise remain lifeless and inactive.

The third crop, in the first proposed course, is wheat, which, if the land is in any decent kind of order, may be well enough, as we consider this grain not to be shy upon new lands, though the quality is commonly inferior to what is raised upon those that have been long ploughed. In the fourth year, it is recommended to sow barley with grass seeds; and, though four ploughings were given, it is not in the nature of things that the ground can be in any thing like good condition. Barley after wheat, upon a clay soil, is now out of fashion; and few seasons will admit of such a number of ploughings being given as are mentioned. If the weather is wet, every ploughing is attended by a positive loss; if it is dry, there is scarcely a possibility of retaining brairding moisture, after the second furrow is given. Very few farmers, from these untoward circumstances, attempt to raise barley upon clay soils, unless it be after drilled beans, where little Spring labour is necessary: it is at all times a hazardous crop, and may be ruined by a single heavy shower falling during any of the operations, or after the seed work is finished. Under different circumstances, that is to say, when all the ploughings and harrowings are given in dry

weather,

weather, an unequal braird and defective crop are the certain consequences.

Now, let us suppose that a farmer takes grass land for tillage, and binds himself to sow it down, in the fourth year, with a crop of barley, to which four ploughings are to be given. If the weather obeyed his command, no doubt he might perform this obligation; but, as the power of man is not so extensive, many things, otherwise proper, cannot be executed in this dependent state. If the Colonel's recommendation was adopted by the Board, and enforced by landlords, what would become of good husbandry? Instead of returning the land to grass, in an improved condition, it would be wasted when under tillage, and scourged with quicks, thistles, and every species of weeds, when restored to its primitive state; the relief afforded to the public necessities, in the first instance, being succeeded by a shortcoming of the proprietor's rent, and a decrease of produce for supplying our markets with the necessaries of life.

As to the kinds of grasses recommended to be sown, we apprehend few good farmers will approve of such a mixture as 14lb. red clover, 4 lb. white, 4 lb. yellow, and two or three bushels rye grass: nor will many be of opinion, that either one or two crops of hay ought to be taken, before the land is surrendered to pasture. Very little red clover is required to be sown, where permanent pasture is intended, because it seldom remains longer in the ground than one year; whereas white clover, which is a perennial plant, cannot be sown too thick. Two or three bushels of rye-grass with the clover, would be pernicious; such a quantity would destroy the small seeds. One bushell, at all events, is sufficient; which, with 14 lb. white clover, 4 lb. red, and the like quantity of yellow, will stock an acre of ground sufficiently with plants, and give a full bite to the bestial depastured upon it during every month of the season, from April to November.

Though it is rather out of our road, in reviewing this work, to point out another rotation, yet we cannot avoid remarking, that a five-course shift is by far the most eligible one for clay lands, when such are to be temporarily converted to tillage: 1. Oats; 2. Summer fallow with lime; 3. Wheat; 4. Drilled beans, with 27 inch intervals, and completely horse-hoed; 5. Barley, with one Winter, and one Spring ploughing, accompanied with grass seeds. Though there are only four productive crops in this course, we are decidedly

decidedly of opinion, that any three of them will, under a parity of circumstances, exceed in value those recommended by the Colonel; independent of the superior condition of the land when returned to grass, which will not only insure a greater quantity of food for the beasts afterwards depastured upon it, but also occasion it to be in superior condition, when tillage is again reverted to.

We now come to examine what is stated respecting the principle on which an increase of rent ought to be estimated, when old grass land is to be broken up.

It is a difficult task to understand the Colonel's opinion upon this point, and we give him credit for his indecision; seeing that no rule can be laid down, for what must always be regulated by local circumstances. After quoting the history of a county (Ayrshire, we presume) where similar operations, he says, actually prevail, the Colonel hints at double rent during the time that the land is in tillage, which we, by no means, consider as an unreasonable proposition, in ordinary cases; but then, he does not advert to the strange nature of the English public burthens, which, in certain instances, operate according to the extent of the tenant's industry, and the value of the crop he raises. In another part, he proposes, that the rent should be ascertained by the verdict of men mutually chosen; who, in case of difficulties occurring, might have recourse to the ancient practice of France, in the case of the Metayers. Alas! Alas! Is the British husbandman to be put upon a footing with those poor oppressed people who cultivated the lands of France under the old government? Better keep the grass lands of England in their present comparative unproductive state for ever, than give the smallest countenance to a practice hostile to improvement, in every point of view, and contrary to the true spirit of the British constitution.

The crops described by the Colonel, as raised in similar instances, afford strong encouragement to plough the whole grass in the kingdom. Ten or twelve Winchester quarters of oats, five or six quarters of wheat, six or eight quarters of beans, cabbages worth 30l. or 40l., four, five, or six hundred bushels of potatoes, and three or four tons of hay, are certainly crops seldom produced upon a single acre of ground. Perhaps some of them may be gained in favourable seasons; but the person who ploughs old grass land, under the expectation of receiving such extraordinary returns, will, in the end, experience utter disappointment.

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As we have entered at length upon that part of the letter which relates to the management of "clay soils that are too strong or wet for turnips," we must restrict our observations upon the management of other soils, within a narrower compass.

The second distribution of soil, is loam, in all its distinctions, fit for turnips; but in this section, notwithstanding that it comprises the greatest portion of English pasture land, and that of the kind most fit for tillage, the Colonel is very short. After mentioning the savannas of America, the plains of Lombardy, the flats of Tanjore, and the Delta of Egypt (places certainly not included in these inquiries) he dismisses the subject with a few general remarks. We are left in the dark, respecting the manner in which this valuable variety of soil ought to be cropped, or in what way it can be best returned to grass, without injury, after carrying a few corn crops.

Sandy soils are next discussed. We have, in this section, a detail of two attempts, made by the author, to cultivate land of this kind; in none of which he appears to have been very successful. We observe the following mode of cultivating such lands in p. 34, which certainly is bad enough.

"If farmers and proprietors resolve to break up very light sandy grounds, to meet the pressure of the present moment, it is presumed, they will find it, in no instance, eligible, to take any other crop of oats, except the ley crop. Wheat, with manure and compost, will answer for the second crop; and as, on such soils, there is little hazard of the corn lodging, and destroying the grass seeds, they may be sown with wheat, and the land, after two years, returned to grass: but if once such lands are broken up, there is a great temptation to continue them under a prolonged and skilful course of cultivation."

We must consider wheat after oats, upon a sandy soil, as ruinous husbandry. Why not turnips drilled, which might be succeeded by wheat or barley; though, we believe, the last would be the most profitable crop? Corn lodges easiest upon sandy soils; though, under the management recommended in the text, there would be no hazard of such a circumstance occurring. We do not think there would be any necessity of sowing grass seeds, if wheat succeeded oats; for the ground would be sufficiently filled with roots, not to be purchased in the seedsman's shop.

The fourth section treats of chalk land and downs; but, neither are the crops, proper for such soils, enumerated, nor is any plan for cultivating them pointed out. The same remarks are, in a great measure, applicable to what is said respecting peat, moor, and fens; which section is eked out to a great length, by a description of Mr Smith of Swineridgemoor's improvements, Lord Kaimes'-operations at Blair Drummond, and suggestions taken from Lord Dundonald's Treatise on the Principles of Chemistry applied to Agriculture. It is obvious, that though great and valuable improvements may be made upon this last class of soils, yet, from none of them can be drawn the supplies which the pressure of the times required, and which, in fact, occasioned these inquiries. Besides, every attempt to improve moorish and fenny soils, is expensive, in the first instance, and hazardous at the best. Much money has been sported away in such undertakings; while those that prove successful, are necessarily long in making a compensation for the original outlays.

We shall now extract the Colonel's concluding observations upon the system previously recommended.

"It will afford me peculiar satisfaction, if the modes of management, specified in this Address, with relation to the leading qualities of land, shall prove useful, by shewing the safe and beneficial practice of breaking up pasture ground, and, after a course of corn, and green crops, returning it to grass, in an improved state.

"Every part of the plan recommended, is the result, not only of long and accurate observation, in many parts of the three kingdoms, but of actual operations, with which the writer is immediately connected, as a proprietor, as a farmer, and as trustee on large estates.

"To what amount these suggestions may be practicably extended, in the immediate breaking up of pasture land, to increase the quantity of corn, is fit matter for the determination of your Lordship and the Board. Any calculation of mine might prove either imperfect or superfluous; especially, as such ample means of information are in your possession.

"Taking, however, the measure of different counties, as lately published by your able and enlightened Secretary, Mr Young, the two grazing counties of Cheshire and Leicester, alone, contain near 1,300,000 acres *.

"Supposing

* Many old farmers in Leicestershire recollect when the greatest part of the county was under regular course of tillage.

" Supposing one-third, or one-fourth, of those rich and long-rested pastures were ploughed this season, it is obvious, that the average produce would be more than double, in many cases triple, the produce of ordinary cultivated lands in England.

" By introducing, and continuing, such a system of convertible husbandry, much greater quantity of corn and herbage may be produced, than by constant tillage or invariable pasturage.

" If one million of such acres were ploughed, in different parts of these kingdoms, it is hardly fanciful to suppose, that an additional produce, from seven to ten millions of quarters of grain, exclusive of potatoes, would be added to the national supply in one year.

" How many such acres there are in the different counties, and how many tenants and proprietors, willing to call forth those advantages, for their own benefit and the public relief, are questions of primary importance."

We agree with Colonel Fullarton, that, ' by introducing such a system of convertible husbandry, much greater quantity of corn and herbage may be produced, than by constant tillage or invariable pasture;' but, we are far from thinking this desireable change will be accomplished by the measures he proposes: nay, we believe, that the multifarious returns made to the Board's inquiries, and any proceedings which may take place in consequence of the suggestions therein offered, will all go for nothing; and that convertible husbandry can never become prevalent, unless certain laws, which powerfully obstruct such a conversion, are previously repealed or amended. Upon this point, we have uniformly held one opinion; and every day's experience convinces us, more and more, of its truth. If the legal obstacles were removed, private interest would soon occasion what may be called the new system to be universally adopted.

That the ploughing of one million of acres of grass land, would add ' seven or ten millions of quarters of grain, exclusive of potatoes, to the national supply, in one year,' is very questionable. We consider, that six quarters, *per* acre, of all grains, would be a great average; yet this return would only furnish an additional supply of four and a half millions of quarters, after seed and horse corn are deducted. The most frugal calculation would require one and a half quarter *per* acre for these purposes; and, for every acre employed in raising potatoes, a further deduction must be made.

Thus, we have examined the leading parts of this Letter, so far as they apply to the 'conversion of grass land to tillage, without exhausting the soil, and returning the same to grass, in an improved state, or without injury:' and the substance of our sentiments thereupon shall be repeated; *to wit*, that, if the Colonel's ideas were practically adopted, the land so converted would not be beneficially managed when under the plough, nor restored to grass in an improved state. The crops of grain, in the first instance, would be defective; and the imperfect condition of the ground, when sown with grass seeds, would curtail the after produce, and lessen its future value.

The remainder of this Letter, viz. from page 64, to the conclusion, is devoted to various branches of political economy, not included in the Board's inquiries. These we shall shortly enumerate; and conclude with a few remarks.

The division and improvement of wastes and commons, are amply dilated upon; and a variety of opinions, relative to the best method of bringing these unproductive lands under cultivation, are offered. The Colonel proposes to adopt Mr Secretary Young's plan, by applying part of them to the relief of the lower ranks. He next recommends a statistical survey of the country; without which, he thinks, that 'Statesmen must remain as ignorant of the internal circumstances of the kingdom, as a land-owner, or steward, would be, who neither knew the extent, soil, produce, rent, nor tenantry of the estate under his direction.' Again, as money is the sinew of improvement, he proposes the erection of a land bank, such as was offered to the Scotish Parliament by the celebrated Mr Law. Another plan, rather more novel, is, to cultivate the Crown waste lands and forests, by bodies of national cavalry; which, he thinks, would relieve the country, and increase our produce. Further, that the purposes of cultivation might be promoted, and consumption diminished, he suggests, that every person, who keeps horses not employed in agriculture, or other useful operations, should be obliged to expose, in the public market, certain quantities of grain, under regulations to be specified by the Legislature. Lastly, in the Postscript, he suggests the propriety of making all persons set apart a proportion of their income, for the supply of future wants; or, in other words, recommends a general extension of the principles upon which the Friendly Societies are constituted.

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We must confess, that we have not perused a pamphlet containing such a number of political speculations; and, without commenting upon their merits, which is altogether unnecessary, it is enough to say, that the greatest part of them are, in every point of view, utterly impracticable. What is mentioned concerning the division of wastes and commons, deserves more attention.

The cultivation of these lands, is stated to be 'more personally interesting to the great body of the people, than any question which has been agitated since the days of Magna Charta.' It strikes us, however, that the great body of the people were originally but little concerned in obtaining the great charter; which proceeded from the exertions of the feudal barons to lessen the prerogative of the Crown; and that their interest in the division of wastes and commons, does not extend further, than in so far as their comfortable subsistence materially depends upon the cultivation of these lands. Three-fourths of the people of England reside in towns; and few, in such situations, have a servitude or claim upon the common lands. This right is chiefly confined to landed proprietors, or owners of cottages erected upon the marches of wastes; and, though exceptions prevail, (as in the case of towns that possess a common muir, such as Newcastle, and others in like circumstances), yet they are not so numerous as to render the great body of the people deeply interested in a general division. Again, in several counties, the breadth of *common* land, in consequence of former acts, is much curtailed; of course, the magnitude of the object to the inhabitants is inconsiderable. Where commons have hitherto been appropriated in severalty, the strictest attention has been shewn by the Legislature to the interest of the lower ranks, or cottagers, who possessed a servitude over them; and, if instances have occurred where a spirit of dissatisfaction has arisen, it proceeded from individuals who claimed a larger share than what they were legally entitled to. The expence of dividing and inclosing, has been more justly complained of; but it is obvious, that this can only be remedied by a general bill; which measure has hitherto been successfully opposed.

We mention these particulars, in consequence of what is said, p. 70, relative to the aversion which the people throughout England have to the division and inclosure of commons. If this aversion proceeds from the inability of the cottagers to cultivate their allotments, then the blame does not originate in the measure itself, but proceeds from the want of

skill and capital among the possessors. In this view of the matter, the Colonel appears at variance with himself, when he supports the arrangement offered by Mr Young; for the means of improvement would be equally wanting in both cases. If it is proper to erect a land bank, in order that improvements might go forward, would not this measure enable cottagers, of every description, to cultivate their legal share of waste lands? The difficulties which small possessors have to encounter, are first exalted to the height of a mountain, and afterwards dwindled away, when a different system is to be supported.

After all, we must consider the improvement of the numerous wastes and commons of England, as an impracticable measure, under the management of small possessors. In all our experience, we scarcely ever saw a piece of barren land improved, in a sufficient way, but when it was possessed by men of considerable capital, which is a *sine qua non* in such undertakings. The instance quoted by Colonel Fullarton, of a person upon his estate improving four acres of sandy soil, and bringing up his family in a creditable manner, does not affect our argument. Who built the cottage, who inclosed the garden, who ploughed, manured, and sowed the land? When these questions are answered, we may next inquire, whether the produce of two acres of sandy land would be sufficient for the consumption of a large family, after seed is deducted; and whether the remainder of the land would feed a cow, a calf, some pigs, and a stock of poultry.

We remember well of the attempt made to improve part of the forfeited estates, after the peace of 1763, by settling colonies of disbanded soldiers upon them. Houses were built for their accommodation, gardens inclosed, implements furnished, and every encouragement afforded to the settlers. Those who wish to learn the result of these well-meant endeavours, may consult Mr Wight's Reports to the Board of Trustees, made twelve years afterwards; and they will find the attempt was altogether unsuccessful. To manufacturers, in country places, a small piece of ground may serve as an object of convenience, seldom of profit, unless it is underrented: But, to a labouring man, who must employ his time in working for others, a few acres of ground conveys no benefit; on the contrary, entails toil, trouble, and loss, on him and his family. In a word, we are clear, that the public interest would be materially injured by the increase of small allotments; because the people upon whom they would be bestowed,

bestowed, are necessarily unable to labour the ground themselves, unless spade work was resorted to, the profit of which, under the present rate of wages, is at best problematical. We shall conclude this article, by extracting a passage from the Letter before us, which furnishes conclusive arguments against the utility of those small possessions. In page 73, the Colonel, speaking of small proprietors and petty holders, says—'Unable to purchase horses, implements, manure, and seed-corn, to hire labourers to drain and cultivate their slender portions, their stock would be starved, and sold for half value; and their holdings would soon be deserted, or disposed of to their wealthier neighbours. It would be an abuse of terms, to call measures, producing such effects, an improvement.'

N.

Observations respecting the Grub, being a Paper read to the Holderness Agricultural Society, by William Stickney of Ridgemont, and published by the Society, 16 *pages: Printed at Hull, by* Robert Peck, *at the Packet-Office.*

The damages occasioned by the Grub-worm, are, in many seasons, so extensive, as to render the present inquiry an object of importance to every practical agriculturist. Mr Stickney appears to have devoted considerable attention to the subject, and to have deservedly obtained the thanks of the Holderness Society for the communication now before us.

The subject is discussed under three heads, viz. To what crops, and to what extent, is the Grub injurious to the interest of the agriculturist? Of what species of the insect tribe is it? Can its depredations be lessened or prevented; and, if they can, by what means? The first and last are certainly of most importance; and, indeed, what is said upon the second branch, is confined to an extract from Chambers's Encyclopædia. With respect to that part of the question, which inquires, to what crops, and to what extent, the grub is injurious, Mr S. observes, that grubs are produced in abundance in all grass land, after the first or second year of its being laid down; and that clover stubbles are also much infested with them. Clean fallows, and lands divested of vegetables, he views, as seldom exposed to their depreda-

tions; and he attributes the general loss sustained from these insects, in crop 1800, to the wetness of the preceding Summer. As to the last and most important part of the inquiry, the means of preventing or lessening their depredations, he thinks, lime spread upon ground infested with grubs, insufficient for destroying them; and, as a proof of this, gives the results of several experiments made to ascertain the effects of this application. He is also of opinion, that any other substance applied to the soil, will be equally ineffectual in accomplishing their destruction.

Mr Stickney's sentiments are so conformable to those we have gathered in the course of an extensive practice upon lands naturally exposed to the ravages of the grub, that we cannot avoid complimenting him upon the accuracy of his remarks. Every old field of grass, when the plough is first applied, will be found stocked with these insects, especially if the soil is clay, or heavy loam, and incumbent upon a hard or close bottom. In the first year, the damage is generally trifling, as the strength of the plants enables them to resist every attack; but, in the after years, if their destruction is not completed by a regular Summer-fallow, the farmer is exposed to very heavy losses. When we first ploughed land of this description, we were led to persist in raising corn crops for several years; but experience soon taught us, that, to avoid the ravage of the grub, no operation was so effectual, as introducing Summer-fallow in the second year; and that, if the season proved dry, and a thin dressing of dung was bestowed, all danger was thereby avoided. Paring and burning, in the first instance, we believe, will also accomplish the destruction of the grub; though, upon this point, we cannot speak experimentally. At any rate, Summer-fallow will answer the end, providing the season is dry; but we have had evidence, that, during a wet Summer, the greatest number of ploughings may be ineffectual.

Upon a clover stubble, where wheat is often materially injured, it is obvious, that a different system is necessary. Mr Stickney very properly conceives it to be of importance, to sow such lands early in the season, so as the plants may gain strength before the grubs are in being. This is a very judicious hint, but difficult to be executed; for a second crop of clover can hardly be gained, consistent with an early seed-time for the wheat. We think his other remedy, of pasturing the herbage, after the first crop of clover is removed, would answer well. The accidents to which wheat, after

clover,

clover, is exposed, have now, in a great measure, in the Northern districts, caused the practice to be laid aside; and oats are substituted, which are seldom injured, upon clover leas, and commonly give the farmer a more valuable return.

Mr Stickney thinks it bad policy to destroy rooks, as their diminution is probably one cause, why grubs have lately increased; and, in support of this opinion, quotes Pennant's Arctic Zoology. We have no doubt, but that rooks are mortal enemies to the grubs, and contribute greatly to prevent their increase; but whether the destruction of the one or the other would be most advantageous, is a point admitting of much discussion; and to be free of both, is unquestionably more to be desired.

A number of observations and experiments, made from August 1794 to August 1795, are included in this paper, which throw great light upon the natural history of the Grub-worm. We believe our readers will thank us for extracting them.

"Eighth Month, 11th (*Auguſt*) 1794. This ſeems to be about the time of the general change of the grub from the aurelia to the fly ſtate.—I have not yet obſerved more than one to be with egg, nor have I ſeen any coupled together; I therefore apprehend, that, if clover ſtubbles could be ploughed ſufficiently early, the temptation for the fly to depoſit its egg there would be removed.

"22d. I obſerved ſeveral of the flies in the act of copulation, particularly in the morning; but, on going amongſt them in the evening, I could ſcarcely find any coupled together; but many of the females were in the act of depoſiting their eggs; in doing which, they kept continually dropping their tails to the roots of the graſs, and moving about from place to place. On inſpection, I found the eggs in thoſe places where their tails had been; I took ſome of the flies, which were big with egg, into my hand, and, preſſing them a little, they quitted ſeveral eggs, which they quit one by one, with a ſudden ſpring. They appeared to me to be ready to depoſit their eggs immediately after impregnation; for, on putting a number of the flies into a phial, I preſently obſerved ſeveral of them in the act of copulation; and, almoſt immediately afterwards, I ſaw the females drop ſeveral eggs. Each of the females contains ſome hundreds of eggs; and what is ſtill more extraordinary, the males appear to exceed the females in number, more than in the proportion of one hundred to one; ſo that, if the flies are not very numerous, it is difficult to find a female amongſt them: this accounts for the obſervation made on the 11th of this month, that I had not then obſerved more than one to be with egg. Since that time, I have found that they are big with egg before they quit the huſk,

huſk of the aurelia; and I have alſo obſerved, that the female is much larger than the male, and differs much from it in its ſhape in other reſpects.

"Ninth Month, 6th (*September.*) I believe moſt of the grub flies have depoſited the principal part of their eggs. Yeſterday, I took a number of the females big with egg, and killed them, by cruſhing their heads; notwithſtanding which, their tails appeared for a conſiderable time to continue the power of performing their office. I folded them up in a piece of paper; and, on looking at them this evening, I found that moſt of them had dropped the principal part of their eggs. I have put ſome of the eggs into a pot, and have covered them about an inch deep with earth, in order to aſcertain what length of time they will continue, before the production of the grub.

"Second Month, 5th (*Feb.*) 1795. I have not yet found any grubs, the produce of the eggs above mentioned; and I begin to be apprehenſive that the eggs have been defective, or that I have deſtroyed them, by frequently ſtirring amongſt the earth, in order to ſearch for grubs. They are to be found in the fields before this time.

"Third Month, 27th (*March.*) Have been gathering ſome grubs, and found a conſiderable number amongſt the wheat, in the eaſt part of Weſt-Hill, which was clover-ſtubble: on the weſt ſide, which was bean-ſtubble, there are but few. I alſo found a conſiderable number in Far-Ground-Hill, it being clover-ſtubble; but in Wadworth-Hill, juſt adjoining, and which was clover-ſtubble alſo, there are but very few. Now, I cannot attempt to account for theſe differences, otherwiſe than by ſuppoſing, (as Wadworth-Hill was ſown a week or two ſooner than Weſt-Hill, and three or four weeks ſooner than Far-Ground-Hill), that either the early ploughing of Wadworth-Hill had been performed before the flies had depoſited their eggs, or, if eggs had been previouſly depoſited, that the burying them by the plough in ſo early a ſtage of their natural incubation, had deprived them of the means of coming to maturity. Should repeated experiments aſcertain, that early ploughing of clover-ſtubbles will be the means of guarding them againſt infection by the grub, the diſcovery may prove an important benefit to the agriculturiſt, and to ſociety. * Some of the grubs which I have got, are nearly full grown; the greater number of them are about half grown,

* Since writing the above, I have diſcovered, from obſervation, that the difference in the quantity of grubs in thoſe fields, was entirely owing to their ſituation, and not to the time of ploughing, as I then apprehended; for thoſe parts where the grubs were leaſt numerous, were ſurrounded by tillage land, where the flies had not been produced the preceding Summer, and conſequently out of the way of infection, as the flies, when loaded with eggs, are incapable of a long flight; but the other parts adjoining, by graſs land, where the flies had been produced in abundance.

grown, but ſome are very ſmall. I mean to ſeparate them into two parcels, the large and ſmall, each by themſelves, to ſee whether there be much difference with reſpect to the time in which they remain in the grub ſtate.

" 30th. Separated the grubs, and put them into four pots, numbered 1, 2, 3, 4; No. 1, which contains ſome of the largeſt and middle ſized, and No. 4, which contains ſome of the ſmalleſt, I have placed in a window, into which the ſun does not ſhine. I have placed No. 2, which alſo contains ſome of the largeſt and middle ſized, and No. 3, which alſo contains ſome of the ſmalleſt, in a window expoſed to the action of the ſun. My view in placing them thus, is, to obſerve whether the different degrees of heat, from the different expoſures, will have any effect on the grubs, ſo as to haſten or retard their change to the aurelia: I mean to feed them twice a week with freſh graſs.

" Fourth Month, 29th (*April*). The grubs in the pots continue much the ſame as when put in, except that the ſmall ones have increaſed a little in ſize.

" Fifth Month, 15th (*May*). Examined the grubs, and found an aurelia in No. 1, in the ſhaded ſituation, but could not find any in the other pots; but ſeveral of them appear to be about changing.

" 24th. Found another aurelia in the ſame pot.

" Sixth Month, 4th (*June*). Found in No. 1. the huſk of the aurelia, mentioned in the minute of the 15th of laſt month. The fly has taken wing.

" 12th. Diſcovered that the large and the ſmall grubs, which I have hitherto conſidered of the ſame ſpecies, are of two different kinds; and that the ſmall ones, which I apprehended were not arrived at maturity as grubs when I took them, are a diſtinct ſpecies, and are now generally changing from aureliæ to flies, which are of a different kind from that which is produced from the largeſt grub, which is not yet changed to the aurelia.

" Seventh Month, 1ſt (*July*). Have not found that any of the large grubs have yet changed to the aureliæ.

" 15th. Obſerved that ſome of the large grubs, as well in the ſhaded as in the ſunny ſituation, have changed to the aureliæ; ſo that it does not appear, that the different degrees of heat have occaſioned any difference as to the time of their change.—Put ſome of the aureliæ into a phial, in order to obſerve their progreſs.

" 29th. More of the grubs have changed to the aureliæ; but no flies have yet made their appearance.

" 31ſt. One of the aureliæ has changed to a fly, and ſeveral more grubs have become aureliæ. Many of them die about this time; ſo that I apprehend the operation of changing is a very painful one.

" Eighth

" Eighth Month, 10th (*Auguſt*). Many more of the aureliæ have changed to the fly; and I have obſerved many flies in the fields. I took ſome of them in the act of copulation, and put them into a phial; as ſoon as they ſeparated, the females began to depoſit their eggs.

" 20th. The grub flies are now very numerous; ſo that this appears to be about the time of the general change of the grub to the fly ſtate. I took a number of the females, cruſhed their heads, in order to kill them, and folded them in a paper; and although apparently dead, except a motion about the tail, they continued to eject their eggs, as I have before obſerved and noted, in a former minute."

Upon the whole, we applaud the laudable attention diſplayed by the author, in inveſtigating this important ſubject. We are alſo of opinion, that ſuch inveſtigations come very properly before a Society, inſtituted for the improvement of Agriculture. The numerous Societies, ſpread over all England, rarely encourage ſuch uſeful inquiries; but devote their chief attention to beſtowing trifling premiums for breeding ſtock, &c. which we ſuſpect will produce little good. Nay, one of theſe Societies lately beſtowed premiums of the like extent upon two perſons, though their merits were, in every point of view, vaſtly different. The one had reared a number of children, and the other a number of chickens!!!

N.

PART III.

AGRICULTURAL INTELLIGENCE.

THE favourable rural proſpect, preſented in our laſt Number, is now almoſt completely realized: And though the crop of grain in Britain cannot, with juſtice, be reckoned uncommonly good; yet, from the extenſive information tranſmitted to us, we are warranted to pronounce it equal, at leaſt, to that raiſed in ordinary years. No ſhaking winds, nor rotting rains, have prevailed, as in the two preceding years, to deſtroy the fruits of the husbandman's labour; on the contrary, the weather, during the autumnal months, was uncommonly mild and ſerene: And, laying aſide the partial

tial injury sustained upon gravelly soils by the severe drought of June, and the general spread of mildew and blight, over the wheat and barley fields, which succeeded the July rains; the crops of this year's growth have encountered fewer accidents, in their progress to maturity, than any raised within the compass of our remembrance.

These happy circumstances are already attended with their sure and certain consequence, *to wit*, a considerable reduction of the prices of grain; and substantially prove the doctrine we have uniformly inculcated respecting the corn trade. In the two past years, grain of all kinds was scarce; of course, prices rose to a high rate; and probably the rise was still further increased by the state of public affairs, which not only enlarged the demand, but rendered foreign assistance more difficult to be procured. Now, when we are favoured with a more plentiful crop, markets are fast returning to their ordinary level; which sufficiently ascertains, that prices are more governed by the quantity produced, than influenced by human regulations.

The consequences of the favourable weather, have also proved the futility of almost every cause, assigned by politicians and pamphleteers, for the late high price of provisions. With one class, it was owing to the great increase of the circulating medium; the natural inference from which was, that, so long as the circulating medium remained undiminished, provisions would not be cheap. With another, it was occasioned by monopolizing, forestalling, engrossing, and regrating; but, how these practices, granting their existence, could make one pound weight less of bread or meal in the island, was never elucidated. With a third, it proceeded from the increased size of farms; notwithstanding it is evident, that a large farm necessarily contributes more to the supply of the market, than the like space of ground divided among a number of possessors. The laws for regulating the export and import of grain, the increase of grass land, and above all, the war, were likewise stated as causes of the late calamity. We were always clear, that every one of these reasons of scarcity would disappear, whenever a fruitful season returned; and we are not disappointed. The circulating medium is not diminished; the laws, with respect to monopoly and forestalling, are still the same; the size of farms continues to increase; the corn laws are not altered; the taste of the public for butcher-meat is not changed; and markets were fast declining, before the preliminaries of

peace

peace were signed: Yet, in defiance of all those circumstances, and many others, which, for two years past, have been offered to public consideration, by political quacks, the prices of the necessaries of life, except butcher-meat, upon which the late season cannot directly have an effect, are greatly reduced. In a word, when the quantity of provision raised, is equal to the quantity required to supply the market, prices cannot be advanced above the ordinary rates; and whenever the quantity raised is below what the consumption requires, prices will advance, in a proportional degree, in spite of every regulation that may be made to counteract them.

To what extent markets may be influenced by the happy termination of hostilities, it would be difficult to predict, as facts are wanting, from which the necessary conclusions can be drawn; but, that they will, to a certain extent, be influenced, requires no illustration. We have constantly maintained, that war, in no respect, was the primary cause of the late scarcity; though, we were clear, it served to increase an evil which, at any rate, was unavoidable in a lesser degree. Agreeable to these principles, we believe, that the restoration of peace will cause a greater reduction in the prices of produce, than would have actually happened, had hostilities continued. Every farmer knows, by experience, the difference betwixt supporting a servant in the master's house, and furnishing him with money, or grain, upon which he can support himself. In the first case, he will consume, or waste, nearly as much provision as would, in the other, feed not only himself, but also a wife and family. In like manner, the host of sailors and soldiers, that will now be disbanded, probably consumed three times more bread and butcher-meat, when employed by the public, than will fall to their share, after being dismissed.

Another important blessing, derived by the community, from the late favourable season, besides reducing the price of grain, is, that the host of monopolizers, forestallers, engrossers, and regraters, who, for two years back, sucked the public vitals, have now entirely disappeared. These monsters, apparently, cannot exist in good weather; but, unlike every other part of the creation, whether human, animal, or vegetable, only live and act during the season of storms and tempests. To investigate their history, is well worthy philosophic attention; for, strange to tell! though

though good weather appears to kill them; yet, after lying lifeless and inanimate for twenty, or even fifty years, they will, all at once, in an adverse season, start up, and renew their destructive ravages with as much vigour as ever. The public have been so dreadfully harassed with their attacks, that it is much to be wished (their destruction is impossible) some effectual mode of resistance could be devised against these monsters, before a season of adversity restores suspended animation, and stimulates their destructive powers.

The high prices of cattle and sheep, mentioned in our last, have rather increased than diminished, during this quarter; though, we have cause to believe, that the cessation of war will have considerable effect in producing a reduction. It is well ascertained, that a great falling off in the number of cattle and sheep, has, for two years back, been taking place, in Britain, from the exorbitant prices tempting graziers and breeders to sell every beast that was marketable; and, perhaps, the quantity of grass land has been lessened within the same period. Whether these causes, or the increase of luxury, or the greater use of butcher-meat, owing to the scarcity of grain (the very general adoption of public kitchens occasioned more to be consumed) have produced this decrease, we will not take upon us to declare; but, that the number of cattle and sheep, in Britain, is below the demand, appears unquestionable; and, what is worse, no change of system, nor fruitfulness of seasons, can restore plenty, for several years to come, under the present rate of consumption, the breeding districts being so much drained.

This is an argument used against the introduction of convertible husbandry; but, in our humble opinion, it is a very weak one.—'Why attempt to cultivate the wastes, upon which cattle and sheep are bred, or the old pasture lands, upon which they are fed; seeing that the number of these animals in the Island is confessedly below what is required for supplying the consumption of the inhabitants?' In this manner does one class of economists oppose the introduction of convertible husbandry, without attending that the measure would, in a very few years, occasion the quantity of herbage and grain to be more than doubled. The wastes and commons, which, at this present day, do not yield a return exceeding one stone of beef or mutton *per* acre in the year, may be rendered capable of producing twenty-five bushels

of

of grain, and five stones of beef or mutton, provided they were drained, ploughed, manured, and inclosed. The old pasture lands, renovated by tillage, would yield heavy crops of grain, in the first instance; and afterwards produce a greater quantity of grass than was procured from them in their original state; while the old cultivated fields, worn out and exhausted by incessant ploughing, would, when laid down to grass, afford a large supply of food for cattle and sheep, in the first instance, and prove a source whence full crops of grain might be drawn at a future period. These are a few of the benefits to be gained from the general introduction of convertible husbandry; a measure, in fact, absolutely necessary to the welfare of Great Britain, and the only one by which a regular supply of the necessaries of life can be insured to the inhabitants.

We are informed, that the importation of grain, flour, and meal, from foreign countries, has, in the course of this year, exceeded four millions of quarters; and that about fifteen millions Sterling have been expended upon the purchases, besides freight and other charges. Great as this quantity of grain appears at first sight, we believe it would hardly supply two months consumption of the inhabitants, and graniverous animals, in the island; for it is well understood, that thirty millions of quarters are required for these purposes, in ordinary seasons. From this quantity, may be deducted one fifth part, the supposed extent of last year's saving, which would reduce the quantity of grain consumed, to twenty-four millions of quarters. This displays the great importance of the inland trade in corn, and the necessity of paying an increased attention to its improvement; since, after searching every port, and purchasing at any price, however exorbitant, it turns out, that only one sixth of our annual supply could be procured from other nations. If the population of Britain continues to increase; if the chief capital stock of the country remains vested in trade and manufactures; if luxury, or, in other words, if the prosperity of the nation is not lessened; then our wants must annually be multiplied, and our dependance upon other countries, for the necessaries of life, be proportionally increased.

In this view of the business, it appears, that, under existing circumstances, the ports will remain constantly open to the introduction of foreign grain, and that the greatest crop will hardly meet the actual demand. Hence arises a necessity for protecting the British Agriculturist, and for preserving

preserving the home market to him, in preference to the foreign farmer, who raises corn upon lower terms in every respect: But we shall only mention labour and public burdens, as, in a question of this kind, rent only claims a secondary consideration.

We are none of those who are advocates for corn laws in the abstract; being convinced that a general freedom of trade, over all the world, such as subsists between conterminous counties in the same kingdom, would be accompanied with manifold advantages. But the situation of the country precludes the question from being taken up in this light. A very great proportion of landed property in Britain has been purchased, and innumerable leases are possessed, upon the faith of the present laws: therefore, a departure from the system, would be accompanied with dangerous consequences to the proprietors and possessors of land, and take from them a part of their property, to enrich the rest of the community.

Upon the supposition, therefore, that corn laws are necessary, it appears expedient to change the rates of import, in order to meet the increased value of labour, and the additional public burdens recently imposed upon the possessors of land. How far these rates ought to be raised, is a subject which requires serious consideration. When the corn laws were first thrown into a regular shape, in 1689, the chief object in view was, to procure a vent for the surplus grain of the island; and, in this view, the bounty was reckoned as a *bonus* granted to the landed interest. But circumstances are so materially altered, that every principle, which then weighed with the Legislature, may now be considered as extraneous and irrelevant. We have no surplus grain; therefore, the means of gaining a foreign market need not be offered; on the contrary, we seem to require an annual supply: consequently, any new regulation or law should merely be confined to securing the British farmer from being undersold in the home market by foreigners, who cultivate their lands at less expence, and under more favourable circumstances.

Want of room, in the proper place, induces us slightly to notice, in this leading article, the Report of the Committee of the Common-Council of the city of London, upon the high price of provisions, and the means of preventing scarcity at a future period. These sapient gentlemen pragmatically give their opinion upon several branches of rural economy; and, with an affectation of knowledge, only exceeded by

their ignorance, point out the most eligible methods of supplying the public market. Where the honest citizens gathered so much knowledge, we are not told; but we should suppose, that men, seldom out of the sound of Bow Bells, were not eminently qualified for discussing topics which have long puzzled the most enlightened economists. Let us put a case in point.—West India produce has, for several years, been uncommonly high priced; and to accomplish a reduction, would no doubt be a desireable circumstance. If a committee of farmers were to sit upon this weighty business; and were they to report, that the size of plantations was too large; that produce was forestalled and monopolized; and that every cask of sugar, and puncheon of rum, when imported, should be instantly exposed in the public market, which, at the same time, should be governed by strict regulations—we say, were a committee of farmers to act in this manner, the worthy citizens would certainly think, that lodgings for their accommodation, ought to be provided in Moorfields. But, would the conduct of the one be more ridiculous and absurd than has already been evinced by the other? We think, on the contrary, it would be more wise; for farmers certainly know more concerning the digging and hoeing of a sugar plantation, than the citizens do about raising wheat, breeding pigs, or feeding cattle. The Corporation of London, twenty-seven years ago, experienced the severity of Mr Burke's satire, upon a similar occasion; and it does not appear that their successors inherit a larger stock of wisdom. On the 25th of March 1773, when the bill, for regulating the import and export of corn, was before the House of Commons, Mr Burke said, 'No wonder we receive petitions for importation, and even for giving a bounty upon it, such as we received from the City of London. Sir, never was any thing so absurd. The City has a mouth, Sir, but it raises nothing; and, in attempting to procure supplies, act with that ignorance of those matters which will always be found in cities. We should not condemn them; we should pity their ignorance: The citizens look for showers of barn-door fowls raining on them from Heaven.—They come, with propriety, before us, on points of commerce and manufacture; and, I hope, we shall ever attend to them with care: But, when they presume to tell us how we are to conduct ourselves in relation to the products of our lands, to our pigs, poultry, butter, cheese, &c. let us not attend to their idle and impracticable schemes.'

Extracts

Extracts from Original Communications.

SCOTLAND.

Letter from a Gentleman in Berwickshire, October 4.

'I never ſaw any thing in vegetation like the progreſs made by my cold-ſeed peas, after the fine rains. I had ſix acres drilled beans, with a few peas mixed, upon land which was dunged; and, during the greateſt part of the ſeaſon, the peas were inviſible; but, at harveſt, they conſtituted the greateſt part of the crop, moſt of them being nine feet long upon an average, and remarkably well podded. If well got, I expect the ſix acres will keep my eight horſes four months in fodder.

Before Winter 1799, I ploughed in, upon oat ſtubble out of lea, twenty-five barrels to the Engliſh acre, of ſpoiled ſalt herrings, upon a four acre field. In 1800, I cropped it with turnips, which were eaten in my fold-yard by cows and young ſtock; and, allowing 3s. 6d. *per* week over head, produced 12l. *per* acre. This year, the field was in barley, and yielded ſeven bolls *per* acre, leaving as fine a ſtool of young clover and rye-graſs as ever I ſaw. A ſecond break of four acres, alſo covered with herrings, miſſed turnips altogether laſt year, being ſown after the long drought commenced; but has this year produced a very heavy crop of oats, with an excellent promiſe of young graſs. I had two hundred barrels of herrings, which coſt me leſs than one ſhilling *per* barrel, laid on the land: they were ploughed in; a boy attending each plough, with a fork, to put into the open furrow any of the herrings that remained above ground.'

Letter from a Gentleman near Stonehaven, October 8.

'I am warmly intereſted in the ſucceſs of the Farmer's Magazine, not only on the principle of public ſpirit, ſince I am ſatisfied that it does much good; but alſo from regard to the individuals who have undertaken ſuch a work. One ſubject which I have often meant to diſcuſs, has already been fully treated of in your work, viz. the beneficial conſequences of foreſtalling. Another ſubject which I wiſh to ſee diſcuſſed, is that of flax raiſing, as I know no agricultural practice that deſerves more to be reprobated than this one, ſo long as the country does not produce food for the ſupport of its inhabitants. No State, but Britain, ever dreamed, in its *mania* for manufactures, to give a bounty for diverting productive land from the growth of grain, and applying it to the raiſing a crop of the moſt exhauſting kind. It may eaſily be ſhown, that none except *alluvial* land is fit

for flax; and we have little of it in Britain, holding away from the Lincolnſhire fens.

I had a very great ſhew of wheat, but ſuffered moſt ſadly from mildew. In general, we have no good wheat, much of it being mildewed and blacked.—By the by, to what do you attribute mildew? It appeared to me, this ſeaſon, to ariſe from a ſea-fog, which we had for ſeveral days, after the flower was off the ear, or while it was going off: immediately after this, the leaf withered, and fell prematurely.

Turnips have not had a recovery, but a reſurrection. From the moſt deſpicable appearance, they have become a fine crop, and are ſtill in a progreſſive ſtate of improvement; but I ſee no proſpect of procuring ſtock for them. The country is exhauſted of cattle, which were bought up at exceſſive prices. I have ſeen ten and eleven ſhillings *per* ſtone, Amſterdam weight, given for lean cattle; and have been told of ſome that were ſold as high as twelve ſhillings. The demand is now a little ſlackened. Very little wheat is yet ſown, and I think leſs will be ſown this year than uſual.'

Morayſhire Quarterly Report.

Our harveſt is moſtly over, and never was the crop got home in better condition. We met with no interruption from rain; and, if a few ſtacks have heated in the yard, it could only proceed from an over-anxiety to have the corn out of the fields. Both oats and barley are certainly of fine quality, and bulk beyond expectation; while a good deal of mildewed and ſmutty wheat may be expected. Much of this latter grain is ſown; ſome fields are already quite green! No contracts for corn, of crop 1801, have yet been entered into; and, during the continuance of this fine weather, little will be thraſhed out; for the foggage is abundant, and fewer cattle than uſual in the country. Until peace was announced, they continued at prices beyond any thing ever heard of in the north; but, for the preſent, dealers are diſpoſed to ſtand off.

At Elgin, beſt beef ſells at 8d. per lib. of 17½ oz.; mutton, 6d. to 7d.

Old oat-meal, 1s. per 9 lib.; new, 15d.

Potatoes, 6d. per peck of 32 lib. Dutch.——*October* 13.

Fife Quarterly Report.

The ſeaſon, in general, has been remarkably favourable to every crop, hay excepted, which has turned out very light; indeed, equally ſo as laſt year, the rains coming too late for it. The barley early ſown on light land, has little ſtraw, having been injured by the long drought. The harveſt has been early, and the weather uncommonly

ly favourable: victual, of all ſorts, well filled, and ripened equally; and, with ſome few exceptions, is now all got into the ſtack-yard.

Wheat is univerſally a good crop; bulky in ſtraw, and the grain of fine quality: but many fields of it, eſpecially in high ſituations, and on ſoft land, much infected with ſmut. A much greater quantity was ſown than uſual in this county; and the produce, per acre, ſuppoſed one third above an average crop: the quantity of flour, in whole, ſuppoſed conſiderably above both the two preceding years together.

The late fine weather enabled the farmers to ſow a large proportion of ground, well prepared, with wheat: much of it is already up, and looking well; indeed, remarkably ſo. Peas and beans an average crop.

Barley.—From ſo much wheat being ſown, leſs ground was left in condition for this grain than uſual; but, as the crop in general is good, and well ripened, it is ſuppoſed the quantity is equal to an average crop. Although the grain is obſerved to be rather ſmall ſized, it is very equal, and fit for malt; that part excepted (indeed a ſmall proportion) too ſoon taken in, and ſome not taken in yet.

Oats.—The dearth and ſcarcity of oat-meal laſt Spring, acted as a bounty to raiſe an additional quantity of this grain. High rents were offered by the farmers for rich old paſtures (5l. 7l. and even 9l. per acre) which had not been ploughed for thirty or forty years. Theſe were let for two crops, to a great extent. The crops of oats, on all ſuch lands, very fine, but not at all in proportion to the length of time in paſture, and ſcarcely any thing ſuperior to land laid down in heart, and paſtured for five or ſix years. The fine ſeaſon has given an abundant crop of this grain. On all lands, wet and dry, high and low, the crop is bulky, and the grain full, and gives much meal. The quantity produced in the county, is generally ſuppoſed equal to the produce of both crop 1799 and 1800 together; on the whole, greatly above an average crop.

Potatoes.—A greater quantity planted of this root, than ever known: the produce great, and the quality very fine.

Turnips.—Some of the firſt ſown failed; but, in general, they may be about an average crop, the late ſown being very good.

Flax.—A very large quantity always ſown in this county; the crop ſuppoſed an average one. What is already dreſſed of this crop, is of fine quality, and the whole will probably be ſo. The flax ſeed ſaved for the oil mills, of this crop, is good, and the quantity conſiderable, and fetches a price one fourth more than ordinary.

The ſecond crop of clover very poor in general; few fields worth cutting. Young clover and rye-graſs looking fine.——*October* 13.

Mearns Quarterly Report.

Corn, of every deſcription, has been a fair average crop, and early ready, as uſual, in the low parts of this county, but rather retarded in harveſt, by a ſcarcity of hands to cut it down. The weather, however, continuing good for ſuch a long period, has enabled the generality of the farmers to get their crop ſafely in, there being but a very few that have ſuffered themſelves to be *caught* in the late rains. The firſt crop of hay was very indifferent, and even in many places very bad: but the ſecond crop is in general luxuriant. Turnip is univerſally a great crop, and much of it cultivated. Cattle, of which the breed here is among the beſt in the north, are in general in fine order, from the late mildneſs of the ſeaſon, which has occaſioned an abundance of foggage; but the number is uncommonly diminiſhed, owing to the great demand from the ſouth, in the early part of the ſeaſon, and were not even then plenty; as, from the prevalence of ſcarcity in the two preceding years, every beaſt, at all fit, and even many utterly unfit, for the market, were diſpoſed of; ſo that, at preſent, there are fewer on hand than ever before in recollection. The operations for the next crop are getting forward apace. Much wheat was early ſown, and looks now extremely well; while the lands ſtill remaining for that crop, as well as the barley fallows, (here generally *ribbed*), are getting on with all expedition.—*October* 14.

Aberdeenshire Quarterly Report.

The weather, during the laſt three months, has been, upon the whole, ſo mild and favourable, as could not fail to produce a good crop; yet, even in this year, a certain proportion of the barley and oats, over all this county, will be found light, owing to mildew, lightning, or ſomething in the atmoſphere affecting them when in the flower: however, the greateſt part of both, eſpecially the oats, is very fine grain: and as no loſs has been ſuſtained in harveſting, either by wind or rain, the crop, upon the whole, with all its deficiencies, may be conſidered as above an average one, both in reſpect of grain and fodder.

Notwithſtanding the early bad aſpect of our turnips, they have, of late, come forward with great rapidity, and promiſe to be a fine crop; ſo are potatoes; and the after graſs or fog, on all the clover or paſture fields, is fully equal to what is gained in any ſeaſon. New graſs, alſo, fills the ground well; and promiſes, if the Winter is not very ſevere, to give us a full ſupply next ſeaſon. Cattle have ſold at very high prices all this quarter; and appeared rather upon the advance when the news of peace arrived. This event has ſtartled the purchaſers, who now look ſhy; little reduction of former

former prices has, however, yet taken place. Grain has come down much; and it is expected, that prices will be ſtill lower. But, in this county, markets are generally regulated by the foreign demand, ſeldom by the home conſumption.——*October* 15.

Letter from Glaſgow, 17th October.

'The greateſt part of our crop of wheat, barley, and oats, was got into the barn-yards, about the beginning of this month, in fine condition. The crop of beans and peas is only got all in within theſe few days. Wheat, of which there was an extra quantity ſown laſt year, has turned out an abundant crop, and of very fine quality, weighing from 60 to 64 libs. Linlithgow firlot. Oats are alſo conſiderably above a fair average. A great quantity of old paſture ground being let this ſeaſon for tillage, at very high rents, ſay from 10l. to 16l. per acre, rendered, in general, moſt extraordinary crops, ſuppoſed from 12 to 16 bolls per acre; on which account, we may ſuppoſe the average of this neighbourhood not to be leſs than 8 to 10 bolls per acre, and the quality good; on an average turning out from 14 to 15 pecks of meal per boll. Barley is a ſhort crop, in quantity; the quality alſo but poor. Beans and peas have turned out a good crop, although longer upon the field than any of the other. Potatoes, of which a large quantity was planted this year, have turned out very productive, and the quality is, in general, very good. Hay, as we mentioned in our laſt, was but a light crop, owing to the long continued dry weather in the beginning of Summer; but this deficiency is amply made up by an extraordinary after crop, a great part of which has been cut, and got well winned: this, with the large quantity of ſtraw, will, no doubt, reduce the price conſiderably under what it has been for this ſome time paſt. What importations we have had, for this laſt three months, have been moſtly from America, and may be ſtated to have been from 30 to 40,000 bolls of wheat, and about 20,000 barrels of wheat flour, beſides rye flour, Indian corn, and Indian corn meal. As our market was but bare at the time the importations commenced, a great part of the flour may be ſaid to be conſumed; moſt of the Indian corn and meal; as alſo, about 15,000 bolls of the wheat. The flour ſold from 63s. to 35s. per barrel; the wheat, from 63s. to 40s. per boll. As there is ſtill a conſiderable quantity of old wheat on hand, we think it will be nearly ſufficient to ſerve the conſumpt, as a mixture for the new, to the enſuing Spring; by which time, we may expect an importation of Baltic wheat. We have but few old oats left on hand; but, from the abundant crop, and good quality of the new, there can be no ſcarcity of that grain before the Spring, when we may expect a conſiderable importation from Ireland. Annexed, you have the ſtate of our markets.

Preſent Prices of Grain, &c. at Glaſgow.

American wheat -	35s.	to 36s.	*p.* boll of 240 lib. Engliſh.
Dantzic do. - -	35s.	.. 38s.	Linlithgow Standard.
Baltic red do. - -	30s.	.. 35s.	
Britiſh old do. - -	30s.	.. 35s.	
Do. new do. - -	26s.	.. 30s.	
Do. do Barley -	22s.	.. 24s.	Stirling Meaſure, 7½ p. cent. above the Linlithgow Standard.
Foreign old oats -	20s.	.. 22s.	
Britiſh do. do. -	22s.	.. 24s.	
Do. new do. -	14s.	1. 18s.	
Do. old beans -	20s.	.. 26s.	
Do. do. grey peas	21s.	..	
Do. do. white do.	22s.	.. 24s.	
American do. do. do.	23s.	..	
Oatmeal - - - -	15s.	.. 19s.	per boll, or 1s. to 1s. 3d. per peck retail.
Peas and barley meal	12s.	.. 13s. 4d.	per boll, or 10d. to 11d. per peck retail.
Flour in bags - -	55s.	.. 60s.	of 2¼ cwt.
Sweet do. in barrels	35s.	.. 37s.	of 196 lib.
Iriſh butter - -	1s.	.. 1s. 2d.	per lib. Tron weight.
Scotch do. - - - -	1s.	2d. .. 1s. 4d.	per do. do. do.
Beef - - - - - -		8d. .. 1s.	per do. do. do.
Mutton - - - -		7d. .. 9d.	per do. do. do.
Hay - - - - - -		10d. .. 1s.	per ſtone do. do.
Straw - - - - -		3d. .. 4d.	per do. do. do.

Letter from Grangemouth, 17th October.

'The crop in this neighbourhood, with the exception of a few beans, has been all ſtacked in good order. Wheat is an abundant crop; the quality in general fine; weight, 60 to 63 lib. per firlot. Oats are a very heavy crop, and much more productive than thoſe of laſt year: the quality is excellent, weighing from 56 to 61 lib. per Linlithgow firlot. The crop of barley is more plentiful than laſt year, but ſhort, perhaps one fifth, of a common average. The quality is generally coarſe, and far inferior to former years, particularly in the low grounds, and where it was late ſown: the weight very various; 68 to 75 lib. per firlot. Peas are above an average crop; of good quality; and will weigh 65 lib. per firlot. Beans are a very poor crop, not half an average; middling quality: where mixed with peas, better, in proportion to the quantity of the peas. The crop of potatoes will much exceed, in quantity, any former year's produce, as a greater proportion of ground was planted; and the quality is very fine. There are not yet many

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taken up. The ſeaſon has been favourable for wheat ſowing: but there does not appear to be ſo much put down as laſt year.

The ſupplies of new grain, hitherto brought to our market, have been ſmall. When the growers thraſh out more freely, a decline may be looked for; but they do not ſeem inclined to do ſo at preſent. The following is our preſent prices:

Wheat, 24s. to 28s.
Barley, 18s. to 23s. } per Linlithgow boll.
Oats, 13s. to 16s.
Peas and beans, none.
Oat-meal, 1s. 1d. per peck
Barley-meal, 10d. } in retail.
Potatoes, 4½d. to 5d.

Roſs-ſhire Quarterly Report.

This diſtrict has enjoyed a favourable harveſt, and the greateſt part of the crop is ſafe in the ſtack-yard. The long continued drought ſerved to check the luxuriant growth of wheat, and ſaved it from lodging; though the bulk, after all, was very great. Black, or ſmut, is more common than uſual; and, in ſome inſtances, conſiderable loſs has been ſuſtained by *ruſt*, which weakened the plant, and prevented the grain from filling.

Oats are an excellent crop, and promiſe to meal well. Barley is below an average. Peas tolerably bulky, and well podded. Potatoes good every where. Turnips, where a braird was ſpeedily procured, are above medium; but many of them late, owing to the ſevere drought in Summer. Prices for oat meal and barley ſet in high; but will now be regulated by the market rates of other places, as we will be able to ſpare a conſiderable quantity for exportation.

Cattle, during the Summer and Autumn months, ſold uncommonly high. The demand was daily increaſing, till the ſound of Peace reached us; which operated upon our drovers like an electrical ſhock, and cauſed all buſineſs in that line to remain at a ſtand.

It may be noticed, that the writer of this Report made a trial of raiſing cabbages from old roots, as recommended by the Perthſhire farmer, Vol. 1. p. 386, which proved unſucceſsful. About the end of October 1800, half a hundred roots were taken up, and planted as directed. They ſtood the Winter well; but, in the Spring, every one of them run to ſeed: which corroborates what is ſaid by Mr A. S. page 273. of your laſt Number.——*October* 17.

Letter from a Gentleman in the neighbourhood of Perth, October 19.

'The harveſt, in this quarter, was all finiſhed in September. The crop, on the whole, is a good one; very high in the compariſon with

with either of the two preceding crops. I may rate *it* at three-fourths of the produce of both theſe years; which, indeed, ſays little for 1799 and 1800, although the fact was moſt feelingly known to many. At ſame time, it is my opinion, good as the preſent crop is, that crop 1798 was conſiderably better. The different ſpecies of grain, of this year's crop, I rate thus—

Wheat, in general, good in quality, (although ſome parcels are much ſmutted); the quantity, *per* acre, a full average crop.

Oats, an excellent crop, both as to quantity and quality.

Barley, rather under ordinary in quality, but well got; and, I truſt, will ſtand pretty fair as to quantity *per* acre.

Peas, greatly inferior to laſt year's. The *potato crop* (notwithſtanding the number of curled plants) is good, both in quantity and quality. Turnips have improved, beyond the moſt ſanguine expectation; and are ſtill increaſing in their roots. We have had two or three mornings of hoar froſt within this month; but they were always ſucceeded by rains, almoſt in the courſe of the following day, which prevented the bad effects of the froſt on the after graſs; ſo that there is plenty of keep ſtill in the fields, for ſtock of all ſorts.

Being now bleſſed with the return of *Peace*, we may the readier bear with declining prices, both of grain and cattle. No doubt the good crop will make up for a very conſiderable reduction in the rate of grain; however, ſhould it continue falling, at the pace it has done for ſome weeks paſt, it may get under a ſaving price for the grower. The fall on cattle, ſo far as I have had acceſs to learn, has been from *ten* to *twelve per cent.*; however, had it not been the plenty of keep ſtill remaining on the fields, which enables the preſent holders to retain their ſtock on hand, I ſhould have ſuppoſed prices muſt have dropped ſtill conſiderably more. Another thing may alſo operate to prevent the depreſſion of prices; namely, the great *numbers which* were drawn off from the breeding counties, for ſome years paſt, and, too, at an earlier age than uſed to be; ſo that the ſtock of beſtial now remaining will not be, as it were, forced to market, by tempting prices, until they arrive at full age.

The late rains have retarded the ſowing of wheat on the potato lands. The fallow fields, made in the end of laſt month, are now exhibiting a beautiful green.'

Eaſt Lothian Quarterly Report.

THE ſingular mildneſs of the weather during the whole of Auguſt, and the greateſt part of September, brought forward the late crops of grain, roots, and graſs, in a remarkable manner, and permitted harveſt work to be executed, with leſs interruption than commonly happens

happens in this northern part of the Iſland. It is believed, that hardly a peck of grain was loſt in this diſtrict, by ſhaking winds; though, perhaps, from the ripeneſs and freeneſs of the ear, a conſiderable quantity dropped in the working. The moderation of the weather, however, occaſioned much damage to thoſe who were over anxious about an early ingathering, eſpecially in the articles of barley and oats. In all dry ſeaſons, the natural moiſture of the ſtraw requires a long expoſure to the air before it is extracted; and as little wind prevailed in the early part of harveſt, the ordinary danger was conſequently augmented.

Though the crop of this diſtrict will prove vaſtly more productive than that of the preceding year, it cannot be eſtimated as exceeding an ordinary average; perhaps, in ſeveral reſpects, it will prove below it. A conſiderable proportion of wheat was either mildewed, blighted, or ſmutted; which, laying aſide its appearance in the field, is evident from the quality of what has been exhibited in the public markets. Owing to theſe circumſtances, the value of this grain is very variable; conſequently, prices will remain at a greater diſtance than occurs in common ſeaſons. After all, from the extent of land occupied with wheat, a doubt is not entertained, but that the quantity of this year's growth exceeds what has hitherto been raiſed in this diſtrict, in any one ſeaſon.

Barley ſuffered in a proportionable way with wheat, and probably from the ſame cauſes, viz. the rains and fogs of July. Very few good ſamples of this grain are to be ſeen; and, if diſtilling continues to be prohibited, the diſpoſal of it will be a difficult buſineſs. Oats may be conſidered as a good crop, both in reſpect of produce of grain, and in return of meal from the mill; though, in the latter caſe, we have often experienced a greater. The beſt oats will yield about a peck of meal above corn; whereas, in very favourable years, particularly 1796 and 1798, nine ſtone of meal from a boll of oats was no uncommon return. Peas and beans, though bulky in fodder, will not be productive in grain, notwithſtanding that the late pods filled better than could be expected.

Turnips are a variable crop, though aſtoniſhingly improved, and carrying an immenſe foliage upon a root generally ſmaller than common. Roota baga is much inferior to what was raiſed laſt year, which may be attributed to the drought in June, and the rapid growth which followed the July rains. Potatoes may be reckoned a good crop; though, in this diſtrict, they cannot be conſidered as uncommonly productive. The ſecond crop of clover was infinitely ſuperior to any gained for ſeveral years paſt.

The paſture lands have carried a large growth of graſs during this quarter, which, owing to the comparative ſmallneſs of ſtock kept, remains, in a great meaſure, to be conſumed. Fat cattle and ſheep

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are ſcarcer than ever remembered; nor will this excite ſurpriſe, when it is known, that they have been bought by the butcher as faſt as they were ready for the knife. Prices, of courſe, have not fallen, as cuſtomarily takes place at this time of the year; and, if other diſtricts are not better provided, there is reaſon to preſume, that a great declenſion will not take place during the Winter months.

The grain market, ſince harveſt, has been well ſupplied; a greater quantity having been thraſhed than common, from the need every farmer felt for ſtraw to cover his crop. Prices have dropped gradually; but no opinion can be given upon their future rates, ſo long as importation is continued. The wholeſale merchants are alſo cautious in commencing their uſual purchaſes; and little has been done in this way, except in the article of oats.

A conſiderable quantity of wheat is put into the ground; but this important operation has been much retarded, by the recent wet weather. Several fields, ſown at an early period, are making a vigorous appearance. It is believed, that leſs wheat will be ſown than laſt year; the quantity of dung, from the ſhortcoming of crop 1800, being hardly one-half ſo large as cuſtomary; and, without a full ſupply of manure, it is not reconcileable with prudence, to extend the culture of wheat.

Upon the whole, the year 1801, in every circumſtance, from the ſowing of the ſeed to the ingathering of the crop, preſented a ſtriking contraſt to the two preceding years, and promiſes to place the agricultural ſtate of this, and other diſtricts, in ſomething like a ſimilar condition to what formerly prevailed.

October 21.

We are favoured by a gentleman, in the vicinity of Edinburgh, with the following extract of a letter, dated July 6. 1801, from his correſpondent in Penſylvania.

Letter from Penſylvania.

'I have been looking over ſome of your Agricultural Surveys, and find there is a great difference in that line here, owing perhaps to ſoil and climate. A buſhel of ſeed to the Engliſh acre is ſufficient; and the greateſt produce is, from 20 to 25 buſhels, (Wincheſter), but more commonly from 12 to 15. A good reaper cuts here, from an acre to one and an half acre in the day, and alſo binds and ſtooks it himſelf. This they do, when they uſe the large ſickle; but, when they employ the ſcythe, they will, each man, cut down from 4 to 6 acres, while another rakes and binds it. All the time of harveſt is here a continued feaſt, on the beſt of victuals, with not a little

whiſky

whiſky beſides. Rye bread, which you ſeem to deſpiſe in Scotland, has long been in general uſe here; and the millers are now ſo expert in manufacturing this grain, that it is hardly to be diſtinguiſhed from wheat-flower, either as to colour or taſte. Wheat is ſcarce, and the demand for it ſo great, that the farmers uſe very little of it in their own families; but ſend it all away to market, even to the diſtance, ſometimes, of 100 miles, by land carriage, in waggons, to Baltimore or other ports. A waggon load is 12 or 14 barrels; each barrel 196 lib. weight. There is a vaſt conſumpt of pork in this country, and alſo of beef; and the demand for coffee is aſtoniſhing, particularly among the lower ranks.'

Letter from a Farmer in Roxburghſhire, October 17.

'Lean cattle, and cattle proper for the ſtake, are by no means plentiful, and ſheep are equally ſcarce, owing to the uncommon demand lately from the ſouth. The quantities carried ſouthward have been ſo great, that I am certain we will have no vent, as cuſtomary in preceding years, for any part of our fat ſtock in that quarter; but I don't think we will, for ſome time, have much to ſpare. Perhaps, ſouth of Tyne, there is more ſtock upon the paſtures than was ever known at this period of the year.

Our crops are bulky, but the grain cannot be eſtimated as of ſuperior quality; nor does the crop, upon the whole, appear to exceed an average. Common oats do not meal well. Barley is of inferior quality. Wheat is coarſe and unequal in general. Beans and peas appear unproductive. There was a conſiderable quantity of wheat ſown, prior to the rains, which looks well; but ſome of the Summer fallows remain unſown; and the fields that carried beans, peas, and clover, are ſtill untouched. Our ſecond crop of clover was very heavy, and the grazing fields are more luxuriant at this day than ever remembered.

Turnips have made a great improvement in the two laſt months, and may be deemed a good current crop. They ſell, of courſe, at low prices. Beef and mutton continue to bring 8d. per lib. Butter, which ſold from 13d. to 17d. per lib., is now reduced to 10d.; and cheeſe has experienced a ſimilar reduction.'

Mearns Quarterly Report, No. 2.

The effect of the July rains, was wonderful upon every one of our crops. Oats, when the moiſt weather commenced, had a moſt miſerable appearance; on thin ſoils, they ſcarcely deſerved the name of a crop; but, except upon dry gravelly ſoils, they have proved a crop of great abundance, perhaps exceeding one fourth of a common average. At the mill, the return may be eſtimated as equal to meal

meal for corn. In cold upland places, the produce is greater than ever gained.

Barley is alſo bulky; but, in point of quality, inferior to laſt year's growth. Upon the coaſt ſide, the bolls may be ſomething like an average. In the interior parts, from every information, the quantity will be one ſixth more.

Wheat is our worſt crop, having ſuffered much from ſmut and mildew. In a few inſtances, the grain is worth very little. Potatoes are unuſually good; and double the extent of land was planted this year than cuſtomary.

Hay had the appearance of being a ſcarce article; and moſt people were impreſſed with the idea that prices would run very high; yet, in looking over the country, as many hay ſtacks are to be ſeen as uſual, owing partly to the exuberant crop of after graſs, which many farmers cut and ſtacked. Prices ſtarted at 1s.; they are now at 8d. to 9d. per ſtone.

Markets for grain are very unſteady.—Wheat 25s. to 27s.: barley, 18s. to 22s. 6d.; oat meal, 18s. to 20s. Lean ſtock was lately ſold at extravagant prices; but, as the demand is leſſened, a reduction of 10 per cent. has taken place.

The reverend Mr Findlater's obſervations upon the corn laws, appear very plauſible; but I would wiſh to ſee ſomething on the other ſide of the queſtion. It is the cleareſt of all propoſitions, that corn will not be raiſed, unleſs the grower is guaranteed in a price equal to the amount of rent, labour, public burdens, and the ſubſiſtence of himſelf and family. Without laying any ſtreſs upon rent, which perhaps may be artificially increaſed by corn laws, the riſe in the other articles, within theſe ten years, has been ſo enormous, as to call for ſome freſh regulations reſpecting the importation of foreign grain. I do not mean to argue againſt the increaſe of wages and taxes; perhaps both were expedient and neceſſary; but certainly fair play ought to be allowed to the grower of corn at home, who ſhould not be expoſed to loſs, merely becauſe the growers in other countries are not loaded with ſuch heavy burdens.—18*th October.*

Berwickſhire Quarterly Report.

Our harveſt commenced about the middle of Auguſt, and has, till within theſe few days, been favoured with a tract of fine moderate weather, free from rain of any continuance, but greatly deficient of that drying quality, ſo eſſential to the preparation of corn for the ſtack-yard. There has been no damage ſuſtained in the field; but, from the humid temperament of the air, it required more than common attention, to avoid heating in the ſtack. Harveſt was concluded, in the lower diſtrict, by the beginning of October:

ber: In Lammermuir, there is ſtill a few oats to get in. Reapers wages were from 1s. 6d. to 2s. per day, with victuals.

The wheat crop was luxuriant, but a good deal of it diſcoloured by mildew; and the grain of Spring ſown fields, in many caſes, ſmall and thin. Barley, though a decent crop as to bulk, is in general ſmall, and of a dingy colour. Oats are finer in quality than either wheat or barley, and fully as productive. Peas are a good crop. Beans were luxuriant; but will not yield in proportion to their bulk. The quantity of ſtraw is far beyond what appearances at Midſummer led us to expect; and, upon the whole, the crop of grain may be conſidered as better than an average one.

Paſturage has been very good during the whole of this quarter; the aftermaths luxuriant; and young clovers every where healthy and vigorous. Potatoes are uncommonly productive. Turnips are thriving, and their aggregate weight will exceed that of ordinary years. The progreſs of wheat ſowing has been retarded by the daſhes of rain that have fallen within theſe ten days; what was ſown previous to that period, had every thing in its favour, and has made a fine braird.

The prices of lean ſtock, during this quarter, have exceeded all precedent. Draught ewes have ſold, currently, from 30 to 35 per cent. above laſt year's value. Since the promulgation of Peace, cattle have rather been on the decline; but, if we may judge from Wooler fair on Saturday laſt, the ſheep market has as yet experienced no material alteration.——*October* 21.

Mid-Lothian Quarterly Report, from Auguſt 1ſt to October 31ſt, incluſive, 1801.

Never, in recollection, has there been a more favourable ſeaſon, for the ripening and the ingathering of the fruits of the earth, than the preſent. The crop, of courſe, ſo far as it depended on the weather, has been collected to the homeſtead, in the very beſt condition.

Some particular circumſtances, however, require to be noticed. Thus, wheat, of which the appearance at one time was uncommonly flattering, has been affected with *ſmut*, to an extent altogether unprecedented; which, beſides reducing the quantity, and hurting the quality in a very perceptible degree, has occaſioned, and will continue to occaſion, no little trouble and expence in waſhing it. This diſeaſe has happened, more or leſs, in almoſt every ſoil and ſituation; and, in ſpite of every previous preparation of the ſeed, by ſteeps and pickles, &c. which, in former ſeaſons, were ſucceſsful, as preventatives. If there is any diſtinction at all as to its prevalence, it is between the moſt early ſown and the lateſt; the firſt being much leſs affected than the other; and yet none was very late ſown laſt year,

year, as, from the remarkable goodneſs of the ſeaſon, the wheat ſeed was much earlier finiſhed than uſual. The *curl*, as formerly noticed, has been very prevalent among the potatoes; and, of courſe, the crop in general has been far from being productive; but, on the other hand, the quality is, perhaps beyond example, excellent. What may be the *cauſe* of this defect in the potato, we are not here agreed in; but our *remedy* is univerſal, being, change of ſeed every third year at fartheſt, from the Muirlands, and which, till now, was attended with ſucceſs. This year, however, nothing but the *firſt* year's change did good.

Oats and barley are both good crops; but the bean crop, in many places, did not recover from the blaſting effect of the intenſe drought, in the early part of the ſeaſon. The peas crop, its companion, is almoſt every where excellent.

Although turnip is not much cultivated in this county, the crop, however, deſerves notice this year, from being ſo remarkably good; while the unuſual product of the ſecond crop of clover, in addition to a freſh, though not bulky, crop of ſtraw, will inſure, it is to be hoped, a ſufficiency of Winter provender for the cattle.

The operations for a ſucceeding crop are going on vigorouſly: wheat ſowing, in particular, is getting forward in the very beſt ſtyle; ſo that, with the recent return of peace, there is at preſent every proſpect of a continuation of plenty.

Argyleſhire Quarterly Report.

From the ſowing of the ſeed, to the cloſe of the Harveſt, we have had, in common with the reſt of the kingdom, the moſt genial ſeaſon ever remembered by the oldeſt men. The crops, of courſe, are remarkably abundant, eſpecially thoſe on wet and moſſy ſoils: their growth was not checked by the drought in the beginning of Summer, as was the caſe on ſome light and dry grounds, till they were refreſhed by ſeaſonable rains in the month of July. The crop of bear is the lighteſt, and does not, in general, exceed that of ordinary years; though that of oats is computed to be, at an average, nearly one half more. The increaſe of potatoes, of which more than uſual was planted, is equally great. The prices have accordingly fallen, moſt rapidly, to leſs than one half of what they were in laſt ſpring. Oat-meal is now at 1s. 4d. the peck of 10 lib.; and potatoes at 6d. the peck of above 50 lib. The high price of whiſky (5d. the gill) will probably keep the price of bear higher in proportion than that of other grain. Any of it that has been yet ſold, is, however, to be accounted for at the price which it may draw about New-year's-day.

Whilſt the price of victual is thus fallen, that of cattle has riſen higher than was ever known.—Cows from 7l. to 9l.; Wedders from 19s. to 22s. Mutton 5d.; Beef 6d. per lib. Engliſh. Butter 13d.; cheeſe

Cheeſe 4d. the lib. tron. Few herrings have been caught on the coaſts of this county during this ſeaſon, in compariſon of former years; and the accounts from the adventurers to the Northern Iſles, are not hitherto very favourable. But, upon the whole, we have all cauſe to join in the general ſentiment of joy and of gratitude to a kind Providence, for the return of peace and plenty on this remarkable year.——*20th October.*

Inverneſs-ſhire Quarterly Report.

Our harveſt was remarkably quick, the crop being all got ſafe into the ſtack-yard before the end of September, without the neceſſity of opening a ſingle ſheaf.

All along the coaſt, from the ſevere early drought, the crop will be below an average; but, in the Highland diſtricts, it is above it, and the quality uncommonly fine. Turnips are generally good, and no complaint, as yet, of the *rot* or *burſt* among them. Little grain of this crop has hitherto been ſold, except barley. Prices from 42s. to 45s. per boll. Potatoes are productive, and ſell from 10s. to 12s. per boll of 256 Scotiſh pints. Hay from 1s. 3d. to 1s. 6d. per ſtone.

This county is ſo drained of cattle, that I hardly imagine the fall ſouthwards will have any effect here till the Spring. Beef ſells, in Inverneſs, at 7d. per lib.; mutton at 5d. The wheat ſeed was favoured with equal good weather as the harveſt, and no change has yet taken place.——*October* 20.

Letter from Dunkeld, October 22.

'I have the pleaſure of ſaying, that the crop, through Athole, and in the vicinity of this place, is extraordinary fine; and that the harveſt was completely finiſhed three weeks ago. The ſeveral grains are ſtacked in excellent condition, and appear very productive. Lean cattle lately brought great prices, but are now ſelling much lower. Indeed, the happy effects of peace and plenty are conſpicuous, all kinds of proviſions being declining in price daily.'

Letter from an extenſive Farmer in Dumfries-ſhire, October 22.

'We had an early harveſt in this county, and every thing was ſafely houſed or ſtacked a month ago. The oat crop, in the lower diſtrict, was not heavy; but, upon the colder lands in the inland parts, was very good, and full as early as upon Solway Frith. Barley is not at all ſo plentiful as uſual: Much of the dung having been allotted to the potatoe fields, occaſioned leſs of that grain to be ſown. Potatoes are a great crop; but I do not expect any ſale, as both poor and rich have them in abundance. I have ſown ſome wheat, which is already covering the clod; but there is not a great quantity ſown in this tract. Any turnips that we have,

are looking well; and the ſecond crop of clover graſs, from the fineneſs of the weather, has been well got, and much increaſed our ſtock of hay.

The price of common oats, at Carliſle, laſt week, was 2s. 6d. per Wincheſter buſhel; potatoe oats 3s. to 3s. 4d.; wheat 6s.; barley 5s.; the latter to be ſhipped for Liverpool.

Our cattle markets are rather at a ſtand, and prices may be ſuppoſed to be reduced, at leaſt, 10 per cent. Iriſh cattle have been extenſively imported. I ſold a large parcel of them in Brough-hill fair; where there were plenty of cuſtomers, and great prices given. We have large droves of Galloways and Highland bullocks up in Norfolk, for St Faith's Market, which holds this week; but, as yet, no intelligence is received: only I am informed that part of them were ſold at the ſhow, before the fair, at good prices; ſome Galloway heifers as high as 27l. Sterling; and that a tolerable market was expected for the beaſts in good condition.

Sheep have advanced in price. Old, or ſtock ewes, of the Cheviot breed, that were ſold laſt year from 9s. to 10s. per head, have this ſeaſon drawn 20s. or 22s.; and wool has alſo ſold high: circumſtances much in favour of the ſtore farmers. At Dumfries market, laſt week, Galloway cattle ſold for about one pound leſs than formerly, and Iriſh cattle about two pounds. Large quantities are on the road for Carliſle market; but, in my opinion, prices, in a few weeks, will be as high as ever, the country being ſo full of keeping. At Wooler fair, I purchaſed a lot of ewes, of the Leiceſter breed, at 55s. per head; the market was high, and every ſheep ſold. I was alſo at Mr Culley's, who has hired out many more rams this year than uſual; ſome at fifty guineas for the ſeaſon; the common rate from 15l. to 20l. Such fields of turnips, as he has, I never ſaw; and the after graſs is immenſe.

I would recommend to every farmer, who works his thraſhing machine with animals, to employ bullocks in preference to horſes. I have uſed them, with great advantage, for two years paſt; and gained a handſome profit upon them at the end of each ſeaſon. They are ſteadier than horſes, and not injured by the labour; which is a weighty concern upon a large farm; it being well aſcertained, that no branch of work is more hurtful to horſes, than drawing a thraſhing machine.'

ENGLAND.

Norfolk Quarterly Report.

We enjoyed an excellent harveſt, and experienced little interruption from bad weather; conſequently, our corn has been carried in choice

choice condition. Wheat, in particular, is of ſuperior quality, weighing, upon an average, 60 lib. per buſhel; and as more acres were ſown than ever were known before, the quantity produced will double that of laſt year. Rye is good alſo; but the culture of this grain is annually decreaſing in this county. Barley is a partial crop: Upon good ſoils, where it was early ſown, the produce is abundant, and quality fine; but upon hot gravelly lands it proves defective, both in quantity and quality; though, upon the whole, we think it will prove profitable to the conſumer. Oats are a great crop; and ſo are peas and tares. Rape-ſeed is excellent, and, being remarkably dry, will be productive in oil.

Our markets ſtarted high, when the new grain appeared; but a ſtrange alteration has now taken place, and both buyers and ſellers appear panic-ſtruck by the peace, which ſeems to have introduced a new order of things. Our current prices are—Wheat, 58s. to 60s.; rye, 42s. to 44s.; barley, 38s. to 39s.; oats, 22s. to 23s.; white peas, 50s. to 52s.; grey do. 40s. to 42s.; tares, 48s. to 50s.; beans, none yet at market; rape-ſeed, 40l. to 42l. per laſt; fine flour, 55s. per ſack.——*October* 15.

Letter from a Farmer in Wales, October 15.

'Since I wrote you laſt, we have had a continuance of favourable weather, and farming has gone on with ſpirit and pleaſure. The hay, early cut, was very light; but, owing to the general Summer rains, the late crops were moſt abundant. This circumſtance, joined to the ſcarcity of cattle, has cauſed hay to become a mere drug; for the beſt quality can be purchaſed at 40s. per ton, which is leſs than 5d your ſtone.

The corn crops had a good appearance from the beginning, and kept in a thriving ſtate through the whole Summer months. Near the ſea, harveſt commenced before the concluſion of July; and by the end of Auguſt, it was nearly finiſhed. We never had a finer harveſt; not a ſingle ſhower for five weeks; of courſe, our grain is excellent, though there is a general complaint of the prevalence of ſmut upon the wheat, which occaſions clean ſamples for ſeed to ſell at high prices. Barley is a bulky crop; and thoſe who have thraſhed, ſay it yields well in the barn; but, from the ſcarcity of ſeed, leſs was ſown than cuſtomary. Oats are good, both in reſpect of quantity and quality. As for beans and peas, none are yet thraſhed; but, from the appearance at harveſt, we expect them to be very productive. Turnips are good, where they were ſown in time; and apples and pears are very plentiful. Prices of grain keep high. Wheat, 92s. to 96s. per quarter, Wincheſter; fine ſamples for ſeed, 108s.: barley, 48s. to 52s.; oats, 25s. to 26s.; potatoes, per peck of 40 lib.

1s. 6d.; butcher-meat, 7d. to 9d. per lib.; wool, 21s. to 28s. per ſtone of 21 lib.

Cattle have been on the advance for ſeveral months, which has occaſioned this county to be nearly drained. Lean oxen from the yoke, that will not weigh above *forty ſcores* when fat, have ſold at 20l.; and young heifers and ſteers much higher in proportion. If the purchaſers are paid for fattening them, butcher-meat muſt be immenſely high next Spring. A change has, however, taken place within theſe eight days. At Carphilly fair, laſt Thurſday, not one Engliſhman appeared; and at Cardriff, on Saturday, the whole pig-drovers abſented themſelves. The cauſe of this demur is attributed to the peace; however, we have very little ſtock to diſpoſe of.

The ſowing of wheat is far advanced, and the early ſown fields look charmingly. For eight days paſt, we have had ſhowery weather, which has wetted the fallows; but the clover ſtubbles are working well.

In the year 1798, I fallowed a field of ſeven acres of clay land, the greateſt part of which was completely limed, the remainder dunged, and the whole ſown with wheat. The crop in 1799 was equally good over the whole; and after three ploughings, barley, with graſs ſeeds, was ſown in 1800, which, from the dryneſs of the Summer, was thin and weak. In the month of September, after the barley was removed, the clover made a vigorous appearance, accompanied, *on the limed part*, by a thick braird of corn, which I ſuppoſed to be barley from ſeed ſhed at harveſt; but, to my ſurpriſe, it ſtood the winter without injury, and proved to be wheat. As it got into ear about the end of May, I allowed two acres to ſtand uncut till the wheat was fully ripe; upon which, I had a large half crop of grain, and a great bulk of clover. There was no appearance of wheat among the barley crop; and on the part of the field not limed, though the clover was equally good, yet no ſtalks of grain were to be ſeen. I therefore attribute the uncommon circumſtance of wheat, lying dormant in the ground for a ſeaſon, notwithſtanding the ground was thrice ploughed, entirely to the effects of the lime adminiſtered to the Summer fallow. The fact warrants this concluſion: And though it may be difficult to ſupport an hypotheſis upon mere theoretical principles; yet, as the grain muſt have lain in the ground for two years, and none was obſerved in the unlimed part, its ſafety undoubtedly proceeded from the lime.

Lincolnſhire Quarterly Report.

The ſeveral crops of this county, upon a fair eſtimation, are fully as good as ever remembered; and our markets keep lowering very much. The wheats yield from 3 to 4 quarters per acre, and will

will weigh 63 lib. per buſhel. Of barley, little is thraſhed; but the return will be from 3 to 5 quarters per acre. Oats, in the fens, are good, and will produce 8 quarters per acre; upon the high grounds, about 6 quarters. Beans about 3 quarters; and potatoes from 700 to 1000 pecks. Turnips are extremely good. It is unneceſſary to quote prices; for they vary ſo much, from week to week, that a return of their preſent rates can be of no ſervice to you.

Sheep ſell at exorbitant prices. *Drape ewes*, from 40s. to 55s. Shearling wedders, from 55s. to 65s. Lambs, 34s. to 44s. per head; the whole of which are an unfattened kind of meat. Retail prices are from 7d. to 8d. Whether or not the calling in of the Government contracts will lower the butcher market, a few weeks will diſcover. If peace had not been concluded, it is probable a farther advance would have taken place.

We have not much wheat ſown yet, but moſt people are begun. I have often ſuffered by early ſowing, as the land cements, and, of courſe, weeds take a ſtronger root, than when the land is harrowed later in the ſeaſon.——*October* 18.

Yorkſhire Quarterly Report.

After a long period of unparalleled trial and diſtreſs to the general maſs of conſumers in this iſland, it muſt be particularly cheering to them, and to the humanity of all orders of men, to contemplate the auſpicious tokens of peace and plenty, which may be ſafely announced in the preſent autumnal reports on the ſtate of rural economy through the country, with perhaps fewer exceptions than uſual. It may alſo be hoped, that the obloquy caſt on ſuch reports, by ignorance or inconſideration, as if the faithful detail of ſymptoms of ſcarcity, when actually exiſting, tended to increaſe dearth, will be found unmerited; at leaſt, thoſe who entertain ſuch ideas, muſt allow that the reports will now have the oppoſite tendency, of increaſing cheapneſs, by announcing plenty.

Wheat and barley, in general, have been as well harveſted as ever known; yet ſome loſs has occurred, from ſtacking too haſtily, and from want of time, or neglect of thatching, and properly ſecuring, the corn from the very heavy rains which enſued. A conſiderable quantity of the late ripened oats has been damaged by the frequent rains. Beans, peas, and the ſecond crop of clover, have had a very unfavourable harveſting ſeaſon. Wheat and oats are full crops; barley a good average one; and beans and peas better than ſeveral years paſt. The prices of all, except barley, are much reduced. Barley is likely to be the higheſt, in relative proportion, becauſe leſs of that grain was ſown than uſual. Potatoes are uncommonly good and abundant, and at the loweſt prices ever known.

There

There has been too much rain for the paſtures; but the fog, or after graſs, and the turnips, on rich dry ſoils, are very luxuriant; yet, the turnips have ſuffered, in a conſiderable degree, from the drought of part of the growing ſeaſon, and the depredations of the grub; ſo that they are faſt changing their healthy hue, to a ſickly brown, or yellow. They are a much better crop than laſt year, but do not ſell at half the price.

The Summer fallows, on many lands, are very foul; an inſtance of ſhameful neglect and procraſtination; as very good opportunities, of completely dreſſing them, were repeatedly afforded during the courſe of the Summer. Some of theſe fallows have been ſown with wheat: the ſtiffer ſoils are wet, and ſeed-work is generally in a backward ſtate.

Our live ſtock, of all ſorts, has experienced a very ſudden depreſſion, in conſequence of the peace. Before that welcome event, there was every appearance of ſcarcity; whether they will recover their late very high prices, a little time will determine. As theſe articles are always affected, more or leſs, by ſtoppages of contracts, &c., (which, of courſe, are only temporary), and as there is obviouſly more feed than ſtock, there is ſome reaſon to think, that the demand for butcher meat may eventually prove fully adequate to any ſupply that can be within reach of the country for ſome time to come; more eſpecially, if the induſtry of the lower ranks ſhould be encouraged by tolerable prices of labour, and cheapneſs of grain. Fat cattle have fallen in price, but not materially. The rot in ſheep is much dreaded.—*October* 18.

Northumberland Quarterly Report.

From the 10th July to the 9th October, the weather has been uncommonly fine and favourable for harveſting both hay and corn crops; the two laſt days of July, and the firſt of Auguſt, with a few days in September, being the only moiſt or wet days that have happened, and which were ſo moderate, as only to interrupt the farmer's progreſs, but did not in the leaſt injure the crops. There are a few inſtances of oats being brought in too haſtily, and heated; but, in general, the white corn has been got dry, and in good condition, as were alſo a great part of the beans and peas. A few beans are yet out, which will probably be injured by the rains of laſt week, which ſtill continue.

Wheat had the appearance of being a very abundant crop; but it received conſiderable injury by the wet cloſe weather, from the beginning to the middle of July, a great number of grains being ſhrunk, and not ſo perfect, plump, and bright as they ought to be; which is probably owing to the ſtraw turning cankered or ruſted, after the cloſe wet weather, and alſo a kind of mildew that affected the

the ears. On ſome light ſoils, there was alſo a good deal of ſmutted wheat, which, on pulling up ſeveral of the ſtems, proved *diſeaſed at the root*; a circumſtance I do not recollect having obſerved in ſmutted ſtems of wheat before.

Barley is the moſt general good crop throughout this diſtrict, and moſtly well harveſted; but the grain appears not ſo fine as we commonly have it.

Oats, upon dry ſoils, were injured by the drought, and on ſuch are a light crop; but upon the moiſter lands, and moory ſituations, this defect is amply compenſated.

Peas and Beans, after the rains in July, run ſo much to ſtraw, that they had every appearance of being very unproductive; but the fine dry weather, in Auguſt and September, cauſed them to fill much better than was expected; and, on the whole, I hope they will turn out a medium crop.

Potatoes were thought to be greatly injured by the froſt in June; but it has turned out quite otherwiſe, as they were never known more abundant, and of a better quality.

Turnips are, in general, good; on ſome very dry lands, they were beginning to mildew, but the late rains will prevent its increaſe.

In travelling through the country, the ſtack-yards appear all well filled, and the crop above an average one; from which we may hope, the price of grain will once more come within the bounds of moderation.

Live ſtock has been increaſing in price from week to week; but the news of peace ſeems to have checked its progreſs, and turned the tide, as prices have lowered a little ſince, though not much. At Whittingham and St Ninians fairs, lean cattle were ſold at ſuch prices, that, if they had been killed immediately, would have come to 10s. per ſtone (of 14 lib.) ſink; while fat cattle could not be ſold for 9s. Draft ewes, of the long-wooled kind, which, when fattened on turnips, will not weigh more than 18 lib. a quarter, were ſold for 44s. and 46s. a piece; and ſhearling wethers, that will not weigh above 20 lib. a quarter, when fattened on turnips, have been ſold for 52s. Pigs, two months old, at 20s. At what price muſt butcher's meat be ſold, next Summer, to repay the feeders? At Wooler fair yeſterday, contrary to expectation, the prices of cattle were not reduced.——*18th October.*

Letter from a Gentleman in Norfolk, October 18.

'After the fineſt and moſt forward harveſt almoſt ever known, it appears a general ſentiment among the firſt farmers, that wheat is a much more productive crop, and of far better quality, than laſt year: that peas, of which I need not ſay many are here grown, are much better podded; and oats better corned: but barley, the eſſential,

eſſential, the ſtaple article of this county, is by no means either ſo productive a crop, or ſo fine in quality, as it was laſt year, where well harveſted. Turnips, a fair average crop, only appearing to tend too much towards a mildew. Graſſes, never better at this ſeaſon of the year.

The prices of fat ſtock, being here invariably ruled by Smithfield market, to which every ſuperabundance is always regularly ſent, I think needleſs to quote them; and I feel it out of my power to give correct information relative to the market for lean cattle, until the termination of St Faith's Fair, held at Norwich the whole of next week; the ſtate of prices there generally ruling the county for the following Winter. The common expectation, however, is, that peace muſt have its effect in lowering prices conſiderably.

The South Down breed of ſheep is very rapidly making its way here, in preference to the Leiceſter, and promiſing ſoon the total extinction of the horned Norfolk greyhounds, ſo long a diſgrace to the county. As for cattle, *your Fifeſhire, and other Scots, are all the rage.*'

Letter from Ripon, (Yorkſhire), October 19.

'I peruſed your laſt Number with pleaſure; and hope the work will be attended with benefit to the cauſe of Agriculture. The remarks of a gentleman, who writes you from the vicinity of Edinburgh, page 354, reſpecting the turnips grown here, are not altogether correct. He ſays, we cultivate them according to the broadcaſt faſhion; but, in juſtice to this neighbourhood, you will permit me to ſay, that, in this aſſertion, he is greatly miſtaken: All the turnips which he could ſee near Ripon, with hardly one exception, are ſown by a drill machine, fixed to the plough, which ſows the ſeed at the time the land is ploughed, at the rate of from half a pound to a pound per Engliſh acre, at the pleaſure of the farmer; and, as the ſeed is depoſited in the ground when the moiſture is freſh, a braird can thereby be obtained in the drieſt ſeaſon; a circumſtance often difficult to be procured in the broadcaſt way. This mode of ſowing turnips is now become general through Yorkſhire. And, as the interval is about 12 inches, hand-hoeing may be given, ſo often as circumſtances require. If your correſpondent had taken the trouble to examine the fields, he would at once have been convinced, that they were not ſown broadcaſt; though, I acknowledge, that, in riding the road, a perſon is eaſily deceived; and, if he was here now, he would be ſatisfied, that we are not inferior, in the cultivation of turnips, to the farmers of any country whatever.

The weather, in harveſt, was very good; but the ſowing of wheat has lately been much obſtructed, by heavy rains. The quantity of potatoes is immenſe with us this ſeaſon.'

Letter

Letter from a Gentleman in London, October 20th.

'Having made the moſt particular inquiries among farmers and others for ſome time paſt, I am enabled to ſay, that the crop, in the counties adjacent to the metropolis, is, upon the whole, as good as that of 1798, eſpecially in the articles of wheat and oats. The beſt new wheat will weigh from 60 to 63 lib. per buſhel; barley 50 to 52 lib.; oats 38 to 43 lib. From contrary winds, and ſtormy weather, we had few arrivals laſt week, and, in conſequence, a ſhort ſupply of new grain appeared at market, which cauſed an advance upon wheat; but, upon the whole, ſo far as the ſeaſon has gone, Marklane has been well ſupplied, and the county markets in Eſſex and Middleſex, for ſeveral weeks, have been very full. At Uxbridge market, where the grain is pitched in bulk, as at Haddington, there were two thouſand quarters of wheat preſented in the week before laſt. The chief quantity of new oats yet offered for ſale in Marklane, has been from Scotland, and ſome of them were very fine. New barley is good in quality, and has ſold at reduced prices for two weeks paſt. New peas and beans are alſo very fine, but rather ſoft, and come ſlowly to market. Smithfield has been pretty well ſupplied with cattle and ſheep; and prices have felt little alteration in conſequence of peace being ſettled, though a fall is expected. Good ſheep are a ſcarce article.

Preſent State of the Markets.

New Engliſh wheat	-	56s. to 67s. *p.* quarter.
Barley - -	-	32s. to 43s. *p.* do.
Feed oats - -	-	22s. to 26s. *p.* do.
Poland do. - -	-	30s. to 36s. *p.* do.
Fine old Eſſex do. -	-	38s. to 40s. *p.* do.
New tick beans -	-	38s. to 40s. *p.* do.
Small do. - -	-	42s. to 44s. *p.* do.
New hog peas -	-	42s. to 46s. *p.* do.
Fine pale malt -	-	60s. to 72s. *p.* do.
Houſehold flour -	-	60s. to 65s. *p.* ſack.
Potatoes, from -	-	50s. to 60s. *p.* ton.
Beef, wholeſale -	4s. 6d. to 5s. 4d. *p.* ſtone of 8 lib.	
Mutton, do. -	4s. to 5s. 6d. *p.* do.	

Retail prices of both, from 8d. to 9½d. *p.* lib.
Hay, 4l. to 5l. 5s. *p.* load.'

Obituary.

Died, on Auguſt 4th, at Aidlethen, near Ellon, in the 89th year of his age, Mr John Garland, formerly farmer at Cairntown, in the Mearns.

At Redbourn, Lincolnſhire, Mr Thomas Sherlock, an eminent farmer and grazier.

On his return home from Stockwith fair, Mr R. Clarke, farmer at Butterwick, near Gainſborough. He was robbed and murdered upon the road, and his body thrown into the river.

Mr Locke of Kempſey, near Worceſter. He went out in the morning to courſe in perfect health, and ſuddenly dropped down dead in the field.

At Landport, near Lewes, Mr J. Tourle, a capital farmer, ſaid to be worth between 2 and 300,000l.

Notes to Correspondents.

Our beſt thanks are offered to the learned Gentleman, who has obligingly ſent us a comprehenſive *Review of the Mid-Lothian Agricultural Survey*. That ſurvey has always been valued, by impartial people, as a firſt-rate performance; and we judge, that the review given of it, will rank equally high in the ſcale of public eſtimation. This we reſerve for next volume, as there will be a neceſſity of dividing it, in order that the uſual variety may be preſented.

It having been ſuggeſted by ſeveral of our correſpondents, that the *Corn Laws* required amendment, we embrace this opportunity of acquainting them, that, in the next Number, will be given ſtrictures upon that important branch of police, by a Gentleman who has attentively conſidered and inveſtigated the ſubject.

The *Extracts*, promiſed in our laſt, from an *Eſſay, ſent to the Board of Agriculture, upon the queſtion of breaking up Graſs Land*, are neceſſarily delayed, the eſſay being ſtill in the hands of the Board.

The Reports for Caithneſs, Tweedale, Lanark, and ſeveral articles of Intelligence, were too late of coming to hand.

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BOOKS

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Every intelligent Farmer will immediately diſcover the very great Superiority of this Plan, *excluſively adopted by* THE BRITISH FIRE OFFICE: Nevertheleſs, ſhould any Farmer conceive, that the OLD MODE of Inſurance is better ſuited to his Purpoſe, THE BRITISH FIRE OFFICE will readily grant a Policy on ſuch Conditions: The Office has given its Opinion as to the beſt Mode, but leaves it to every one to make his Inſurance as he may think proper.

The preſent abundant Harveſt, ſo happily got in, renders it of importance to every Farmer, to loſe no Time in getting his Property inſured; and as the Quantity, in many Inſtances, is ſo large, as to occaſion much Corn to be Stacked, which, in a ſhort Time, may be removed into Buildings, the Specifications of the Value to be Inſured on each Deſcription of Grain, in whatever Part of the Farm it may be, (without an Average Clauſe in this Office), is ſurely the eaſieſt and beſt Plan that can be deviſed for perfect Security; and the Avidity with which the Farmers (*who are the moſt competent to judge*) in every Part of the Kingdom, embrace the NEW MODE, is a palpable Proof of its Superiority.

The Capital of THE BRITISH FIRE OFFICE, and the Reſpectability of its Proprietary, render any Obſervation on its Stability unneceſſary; and the Characters of the Managers place them above the Poſſibility of their running into wild or fanciful Schemes, in order to obtain Buſineſs: All the Rules, Regulations, Terms, and Conditions, have been maturely weighed and conſidered, and will be found, on Reference to the Printed Propoſals, which may be had *Gratis*, by applying at the Office, or to the Country Agents, (one of whom is appointed in every City and large Town), to contain every Thing that is Fair and Equitable.

☞ *All Annual Payments muſt be made within Fifteen days from the Day they reſpectively become Due.*

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